

THE BASIS
OF
PRACTICAL TEACHING

BRYAN

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THE BASIS OF PRACTICAL TEACHING

A Book in Pedagogy

BY

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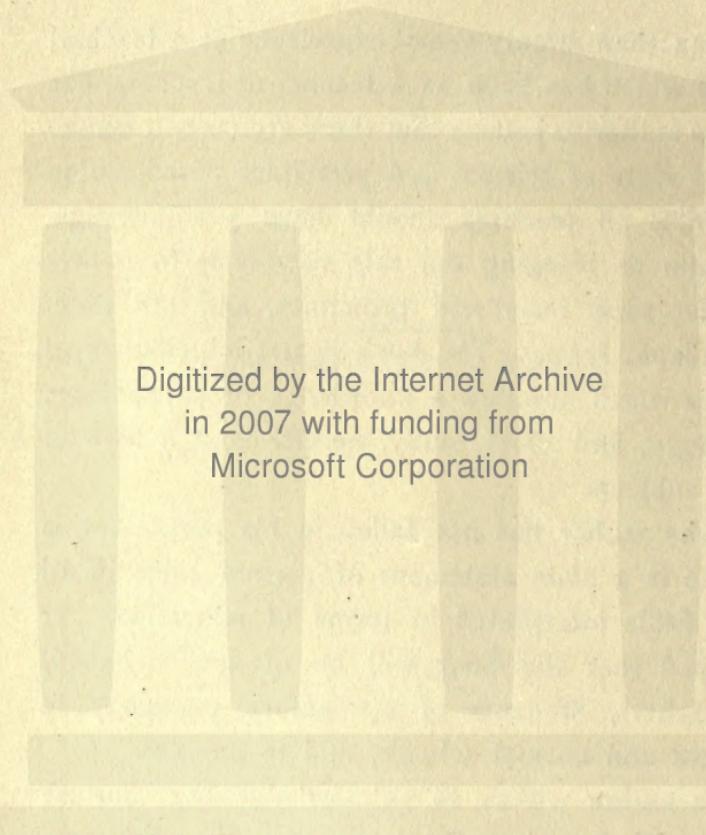
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PREFACE

MORE than twenty years' experience as a teacher, half of which has been as a teacher of teachers, has led the author to believe that there are certain fundamental facts of science and principles of education of which all teachers should have a knowledge. The aim in bringing out this volume is to gather together such facts and principles, and put them in readable form. The book is not a pedagogical treatise which assumes a knowledge of psychology, neurology, and child study, neither is it a text on these subjects.

If the author has not failed in his purpose, this volume is a plain statement of certain facts in all these fields interpreted in terms of education. It is hoped that the book will be of special benefit to teachers, students of elementary pedagogy in colleges and normal schools, and to parents.

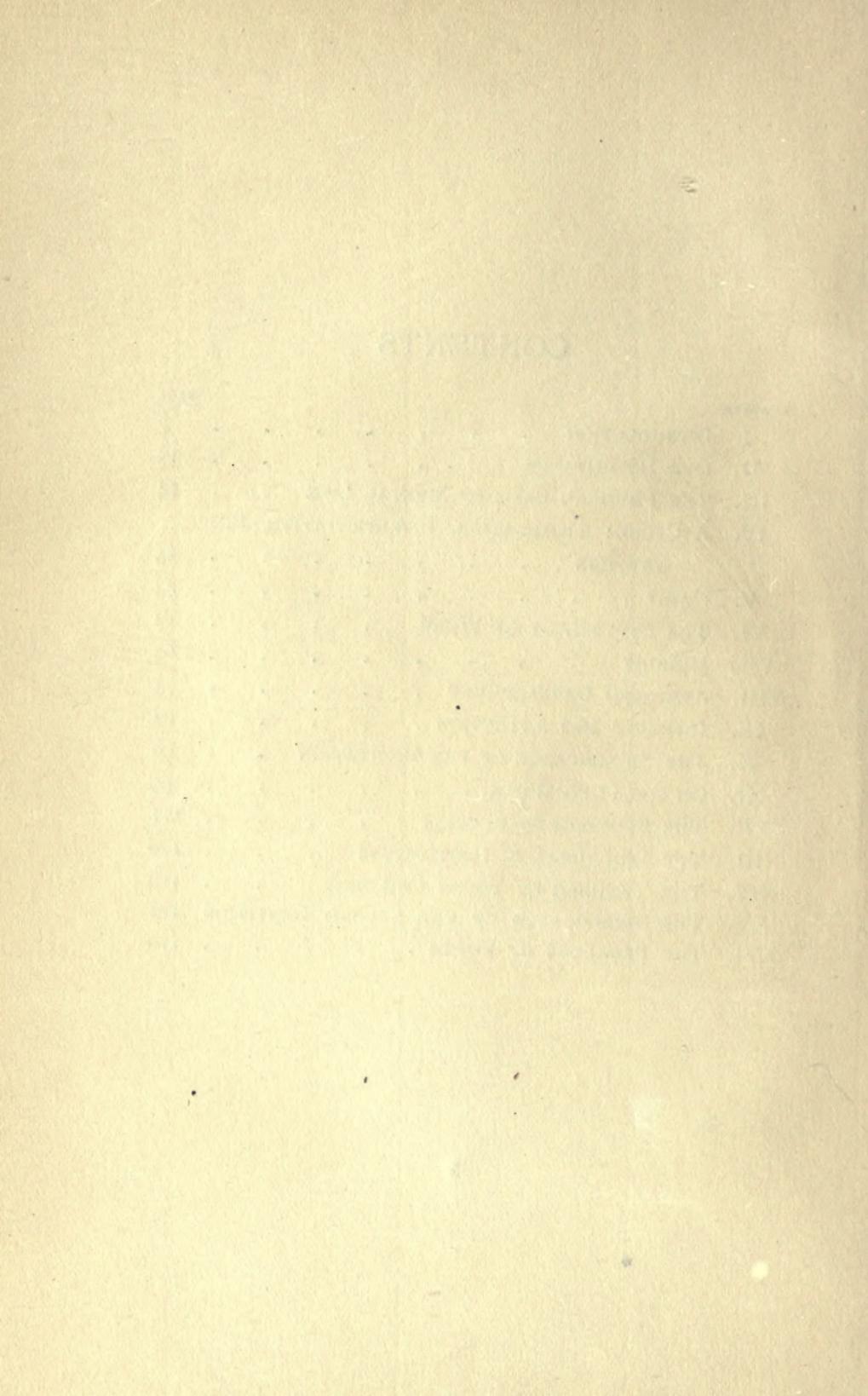
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THE BASIS OF PRACTICAL TEACHING

CHAPTER I

INTRODUCTION

THERE was a time when the branches taught seemed to be the center and end of education. From this extreme view of the subject there has been a gradual transition toward the opposite view, that the child is the center and end of education. This is presumably the most advanced view generally held at the present time. Yet, while it is recognized that the child is the center and end of education, I think we are not resting upon this as an abstract or isolated thought. As the transition from the first view to the second and opposite one has been slow and gradual, so the present movement from the child, as such, to the child in his entire setting will be neither rapid nor always encouraging.

It was seen that arithmetic, for example, is not the reason for the school, but that the child with his limi-

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tations and possibilities is the reason. The observance of this fact was the excuse for introducing books on mental science into the teacher's professional reading-course. But the thought that the child is made up of soul, body, and clothes was not grasped in its fullness; and, as we should expect, we find that stress was laid on the most abstract phase of the child, and the one which would seem farthest removed from the old idea of the branch as end and the child as means.

The first so-called strictly professional books, therefore, were metaphysical rather than psychological. There was no discussion of the constitution or nature of the child as such, but almost the entire emphasis was placed upon that phase of the child known as his mind. The professional literature available to the teacher, while in most part it was truthful and sometimes helpful, was always abstract, heavy, and difficult of application.

The chief defect was that we were not viewing the child in his entirety. When it seemed as though the rank and file of the teachers were becoming reconciled to the foregoing programme (although I think they did not feel at home in it), we had brought to our attention a fact which we had always known, but of which

we were not seemingly conscious — namely, that every child mind that ever came to school came in some kind of body, and that the kind of body in which it came determined, to a great degree, what the mind might accomplish. This, doubtless, is a great step in advance of anything which has gone before, and it would seem that too much emphasis could not be given to the idea that the entire child, body as well as mind, is the subject of education. In fact, from the absolute point of view, I am sure that too much emphasis could not be given it. The time and energy that have been spent studying eyes, ears, noses, skins, feet, and hands, with a view to gaining a clearer and deeper insight into the physical and mental conditions of the child, have been well spent. All the conventions that have been held, all the papers that have been prepared and read, all the speeches that have been made, and all the discussion that has resulted from these things, have been eminently worth while. It is doubtful, however, if more than the first word has been spoken along this particular line of pedagogical research by those who know whereof they speak.

The chief hindrance, so to speak, to the comparatively new movement has been the work of the over-

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ardent but untrained and unwise advocates of it. There has been extensive and vigorous opposition to this movement toward the educational laboratory, and some of our most experienced and enthusiastic educational leaders, in the score of years that have just passed, look upon it as a fad which is having its day and will soon cease to inflict itself upon us. That this should be true is by no means strange. The opposition and the doubt manifested toward this new educational truth are no stronger than the opposition and doubt that were shown at the birth of the sacred theories to which these very same people now cling with so much tenacity. The birth pains of ideas are frequently as severe as physical birth pains, and as in physical birth the pains are proportional to the complexity of the individual born and the one giving birth, so also in the world of ideas, he who has all his theories and philosophy worked out and wrapped up and labeled, and who has lived by them in faith for years, must find great hesitancy and mental pain in breaking away from them.

In discussing this subject with those whose mental nurture has been largely speculative pap, the point of contention is that it is a low and materialistic way of looking at a human being, to consider him as sub-

ject, to so great an extent, to his body and physical environment—that it would be more pleasant, and much more encouraging, to believe that mind could lift itself above its presumably physical limitations to the realization of any task or ideal which it might set for itself. It must be admitted that this would seem to be a pleasant way, and that there perhaps could be but one possible objection to looking at it in just this way,—which is, that we cannot do it.

We are too much inclined to speculate and to work out fine-spun educational theories, to wrinkle the forehead and overtax the mind and strain the eyes in trying to search out a deep, mysterious, semi-mythical something that will settle things; and we have let the resources at hand and at our disposal go unappropriated. The man who has to study physiology, anatomy, *materia medica*, and pedagogy to work out and appreciate the grain of truth in this little formula—(1) as you think, so are you; (2) as you eat, so you think; (3) therefore, as you eat, so are you—will never be a power in the earth from the standpoint either of *materia medica* or pedagogy. And the man who has to leave the halls of any American college for some years of study abroad, to learn that the varying conditions of climate and the varying conditions of pestif-

erous insect life serve as distinct causes of his varying moods and abilities to do work, has already shown himself so insensible to his copartnership in the solution of life's problem as to render him wholly unfit for pedagogical research.

I have emphasized this point somewhat, that I might not be interpreted as underestimating it in discussing the next phase — one just beginning to dawn upon us, and one in which I so thoroughly believe. Yet surely no one of these or all of them constitute our *sine qua non*. We must avoid any such attitude toward so great a problem. The day of settlement is not yet at hand; we are even yet doing pioneer work on the frontier. John Smith thought he had seen America! But we are all John Smiths on the James River, and have not crossed the Appalachians, much less the Mississippi Valley or the Rockies beyond.

It would seem from what has been said that there can be no rational study of the educational problem in which the body of the child is ignored or passed by with but slight attention. And this truth, born of struggle as it has been, is finding acceptance on the part of a large minority, if not already a majority, of school people and those interested in children. To consent to a theory and to be able to work effectively

in the light of it are two different things. Having, therefore, the consent of many teachers as to the merits of this view and the need of its application, we will make it the purpose of some of the following chapters to help, in a practical way, in the solution of this particular problem.

Every mind, then, does come to school in a body, and the kind of body in which it comes does determine to some degree, at least, what it will do with itself after it gets to school. But while this is true, it is just as true that every child (I mean, now, the entire child — soul, body, and clothes) who comes to school comes in a crowd, sits with a crowd, studies in a crowd, (and sometimes *with* a crowd), recites with a crowd, plays with a crowd, goes home with a crowd, eats with a crowd, and often sleeps with a crowd. So it can be seen that he is a very much crowded individual, and, if possible, should have something to relieve the pressure. I have often thought that if a child could pick up his body and go to some Robinson Crusoe island to live; if he could have the necessities of physical life sufficiently supplied; if by some special act of revelation he could have the average measure of school wisdom, as given in the class room, instilled into his mind; if he were subject to the pains and aches

of average humanity, but were entirely isolated from human society; and then we could have written out for us the history of what this child thought and did, — that with all this, we could have but little notion of what the child would have been if reared in human institutions. In other words, if I knew to-day what you would do, and what you would be, in a life of absolute isolation, I should know but very little — although somewhat — of what you really will do, or be, in a life of human environment and institutions.

It may not be easy to induce people to give their consent to the importance of viewing the child, in his physical setting and in his relations to his natural and institutional environment, as the center and end of education, but such consent must be won because, up to date, that is our most comprehensive child. Having gained this point, it will then remain to assist school people and others interested in the welfare of children to some plausible way of rearing such a child.

CHAPTER II

OUR INHERITANCE

WHAT a thing is at any stage of its development depends upon two things : what it was when it started — its inheritance; and what it has done and had done to itself since it started — its experience. This chapter will discuss the more general features of inheritance.

At birth every individual has a given organism for which he is in no sense personally responsible. In most cases this organism is capable of large development in strength, health, and efficiency, and in most cases also it can, through failure to observe and practice the laws of development inherent within it, fail to realize upon its inheritance, and so decline and die. With this given organism are also inherited broad general instincts, or tendencies to action and reaction. The student of psychology and pedagogy should not fail to remember that these instincts are general and not special — upon this fact rests much of the hope for success in training. The individual is not born

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with the instinct to make definite specific reactions to definite specific stimuli, but may react in a large number of ways, any one of which may in the first instance be appropriate to the stimulus causing the reaction.

The stimulus which comes to a young child when he first sees a penknife, for example, results in numerous reactions, many of which would not be appropriate in an adult. The child learns through experience what these appropriate adult reactions are and no longer tries to suck or eat the knife handle. But in his first days sucking and biting were the instinctive reactions to the penknife stimulus.

It is a principle of matter and mind that things tend to act as they have previously acted. This is seen in the letter paper that has been folded; in the coat sleeve that has wrinkled; in hair that has been parted in the middle, or on the side; in people who have learned to use ungrammatical forms in youth; in children who have not been taught to control their tempers, and in children who have been taught to do so. It is seen in the story-teller, in the man who exaggerates, in habits of carelessness and habits of accuracy. Whatever an individual does, constitutes in his organism an added excuse for doing it again.

It can be seen, therefore, how important it is that these general instincts of the child should be set going in the right way and not be allowed to shoot off in ways which will prevent his development, and which may result in ruin. Because of improper associates (personal stimuli) during the years of puberty and adolescence, which mark the rise and development of a racial instinct, many a youth has apparently been rendered incapable of ever having a right mental reaction when thinking of the opposite sex. So it is with various instincts during our entire lives. The most important thing that can happen to a child is that he shall have the wisest possible guidance during these early years, when he is making his first reactions to this great world of stimuli — physical, personal, social, and religious — in which he is practically swamped. New light is thus shed upon the importance and sanctity of parenthood, and new emphasis is placed upon the responsibility, the opportunity, and the dignity of the teaching profession. Nothing will be more conducive to thoughtfulness on the part of the teacher in everything he does than the realization of the fact that he is not teaching for a day only; that the child's behavior, his life of activity, his responses to his environment to-day, are blazing the way in which he will

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in all probability go to-morrow, and all the days that follow to-morrow.

The great length of the period of infancy in the human child is significant. Contrary to the popular thought that man is the least instinctive of animals, he is perhaps at birth the most instinctive. He is not born with so many ready-made specific instincts as are the lower animals, and herein lies his hope of progress. Within a few months after birth the puppy and the kitten are performing practically all the dog and cat activities, and are performing them as well as they ever will. They have in a very true sense inherited these definite modes of activity and they can no more avoid them or outlive them than they can their color. Their period of infancy is very short, for they have little to learn. With the human child this is not true. Twenty-five or thirty years are required to bring him to adulthood. At birth or soon afterward he is not able to perform numerous activities with precision and accuracy as are the lower animals. For years he is incapable of doing anything with precision and accuracy. But he starts with an organism and with broad general instincts that are capable, by proper training during his long childhood, of being developed into specific skills heretofore unrealized in the race.

The human nervous system is no exception to the tendency of all things to act again as they have previously acted. As a consequence most of the adult human activities are the results of habits which have been formed in the life of the individual. The general instinct with which the child started, in manifesting itself in certain definite ways at the beginning, instead of certain other definite ways which were just as possible and just as appropriate, has developed into specific habits, and has done so by losing its general possibilities. This can be illustrated if we liken the possibilities of the young nervous system and its general instinctive tendencies to the possibilities of new milk. The new milk has butter possibilities, cheese possibilities, and doubtless many others. Now if it goes through the processes which result in butter, it loses its cheese possibilities. The price it pays for being butter is that it shall never be cheese. So it is in the development upon the basic human instincts: the possibilities at the beginning are numerous and untold, and in the adult they are less numerous and more specific. As a rule the price we pay for certain skills is our inability to be skillful in certain other lines. The Jack-of-all-trades can only be such at the price of being master of none, and the master of one trade

can be such only by surrendering the original possibility of shallow versatility.

It seems to be pretty generally recognized that the child inherits the religious instinct, but he does not inherit the Methodist or the Presbyterian instinct. He does not inherit the Protestant or Catholic instinct. In all probability he does not inherit the Christian or Mohammedan instinct. But he is by nature religious, and which way he shall go will be determined more by his early personal stimulations than by all other things combined. The importance of the character of the child's associates cannot from this standpoint be overestimated. It is not at all strange, psychologically, that the children of Methodists should be Methodists; the children of Catholics, Catholics; and the children of Mohammedans, Mohammedans. The strange thing would be if they were not. We find exactly what, from the standpoint of the psychologist, we should expect to find. The child inherits the potentialities for a social life,—a life of organization,—but he does not inherit the specific tendency to organize as the Democrats do or as the Republicans do. But here again we see what we should expect, that the children of Democrats are Democrats, and the children of Republicans are Republicans. Any

violation of this rule is exceptional. The effect of personal stimuli, from childhood up, is here plainly seen.

The child doubtless has the language instinct, but in all probability he does not start with the English language instinct, or the German language instinct, or the French or Spanish language instinct. In which direction this language instinct shall manifest itself depends upon the specific language stimuli which come to the child. The conditions for speaking the Spanish language fluently are that the child shall be continually surrounded by people who speak it fluently, and the price he pays for such attainment through such personal stimuli (social environment) is his inability to speak many or any of the other languages so well. Or, again, the child is not born with a good instinct for grammar or a poor instinct for grammar. Whether he shall finally say "had gone" and "between you and me," or shall be doomed to say "had went" and "between you and I," depends primarily and almost entirely upon the language stimuli to which he is subjected during his first years. The child is born with the instinct to feed himself, but he is born with neither good table manners nor bad table manners. These are matters of acquisition that are, however,

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rooted in the general instinct, and result from it under specific stimuli.

The teacher is almost sure to underestimate his magnificent chance and his tremendous responsibility, if he does not realize that the child's inheritance is not special, and that his ready-made reactions are comparatively few; that upon him devolves the task of providing for the child stimuli whose appropriate reactions will make for strength and not for weakness. The wise teacher will see that it is the sum total of such reactions which constitutes behavior, and that behavior is but the expressed side of character. He will then be able to evaluate the different school branches and see the significance of each. He will no more look upon the school course as a thing to be accomplished by the students, but rather as a vast variety of opportunities to stimulate the students to activity. This conception of the child's inheritance will do more to enable the thoughtful teacher to place him where he belongs, at the center of the entire school process, than will any other psychologic conception. It will enable him to see that although through blood relationship it is given to the parent to determine what shall be the range of the child's possibilities, nevertheless through the teacher as the conscious agent of the child's most

thoughtful stimulations are his definite, specific attainments realized. A thousand ways the child may go; it is the teacher's pleasant, though often difficult, task to determine that he shall go in those ways only which lead to life.

CHAPTER III

THE PHYSICAL BASIS OF MENTAL LIFE

ALL mental life, so far as we are able to observe, is directly associated with some sort of physical organism, and, so far as we know, this is always an animal organism. There may be a psychology of plants, but the fact has not been established. It is a generally accepted fact that consciousness is more closely associated with and directly dependent upon the nervous system than upon any other part of the organism. This gives us a basis for the study of consciousness in two directions : (1) from the standpoint of neurology — thus ascertaining, as well as may be, the exact relation between neural development, neural complexity and disease, and the mental life, normal and abnormal; and (2) from the standpoint of expression. We know the mental life of another only as we are able, through introspection and observation of his expressive movements and language, to infer what his conscious states are. But his expressive life is subject to nervous control. The nervous system then serves the double

purpose of being the basis of all psychical life and the basis for the expression of it. It is evident, therefore, how important must be a general notion of the nervous system even to the amateur psychologist.

The nervous system is composed of a vast number of neurons, so called, each of which consists of a nerve cell and a nerve fiber or process. The nerve fibers extend into all parts of the body, dividing and subdividing into the smallest conceivable fibrils in the peripheral organs. It is the opinion of the most careful and thoroughgoing students of neurology that these neurons, even in the periphery, never directly connect one with another; however close they may come, and however minutely they may intertwine, they never, so to speak, grow into each other. The transfer of a nervous impulse from one neuron into another is accomplished by a method known in physical science as induction. The constitution of the nervous system as to matter and structure is such as to permit of three possibilities for nervous impulses: (1) Many nervous impulses may be propagated at the same time. (2) A nervous impulse may be modified by the induction of another impulse from a neighboring neuron. (3) A nervous impulse transferred to another neuron may be modified by an impulse already there.

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The question of the exact relationship between neurology and psychology, between matter and mind, is a much mooted one, and one which may never be fully answered by science. The discussion of Mercier in his book on "Sanity and Insanity" will help the reader into the latest and most plausible theory on the subject:—

"The relation of mind to nervous processes is very peculiar, and since it is, in fact, very different from that which is vaguely current, and, I will not say accepted, but assumed, by many who have not studied the matter, it will be necessary for the reader to rid himself as far as possible of the preconceived notions of the matter, and to begin its consideration afresh with a perfectly open mind. In the first place, he must discard altogether the notion that mind can work upon, or influence, or produce changes in the nervous system, or in matter of any kind, however arranged; and, in the second place, he must rid himself of the idea that any nervous process, or any movement, or rearrangement of material particles, can ever, under any circumstances, be transferred into mental phenomena — into an idea, or a feeling, or any other state or condition of mind.

"The true connection between nervous and mental phenomena is believed to be this: that when, in the course of its circuit from the organs of sense to the muscles, a nerve current reaches the highest centers, and sets them in action, then this activity of the highest nervous centers is attended,

we cannot say why or how, by mental states. Every alteration of nervous tension in these upper centers is attended by a variation in the mental processes. Every fluctuation of nerve currents, in this way and in that, has an accompaniment in a variation of mental states strictly in correspondence with it. The one set of changes takes place in the nervous system, and is an affair of molecules, and discharges, and nerve currents. The other set of changes takes place in the mind, and is an affair of ideas, and feelings, and volitions. The one set of changes accompanies the other set of changes invariably and instantly, just as the movements of the shadow accompany the movements of the man. But the mental changes can no more influence or alter the nervous changes than the shadow can move the man; and the nervous system, or the body which contains it, can no more act independently and directly upon the mind than the man can pick up his shadow and throw it away. The influence of the body is limited to the changes that it brings about in the working of the higher nervous centers; and when such a change is produced, change of mental processes takes place simultaneously, just as a change of the attitude of the body is accompanied by a change of shape of the shadow. But to suppose that an action on the body can influence the mind without changing the nervous centers is like supposing that a man can alter the shape of his shadow without moving his body."

The theory of the parallelism of neural and psychical states seems the most probable one, and the one fraught

with fewest dangers of rank misconception. We know, for example, that as the organisms of conscious beings vary in complexity, so the accompanying consciousnesses vary. We know that the more complex and highly developed nervous system is found in conjunction with the higher and more complex forms of consciousness,—thought, feelings, and volitions,—and that the simple, undifferentiated, unicellular (so to speak) nervous system is paralleled by the simplest and most rudimentary form of consciousness. In man we find the parallelism between the most complex, highly developed nervous system on the one hand, and on the other hand, psychical activities unthought of in connection with any of the lower forms. But so far as is known to science, consciousness does not accompany changes or disturbances in all parts of the nervous system—not even all those in the higher nervous centers. What happens below the threshold, no one is able to say. I have no quarrel with him who says, “A rudimentary consciousness, a consciousness *in potentia*, accompanies all neural activities.” Who affirms and who denies are equally ignorant of the facts. But for all scientific and practical purposes we are authorized by the facts to say that disturbances in the higher brain,

the cortex, alone are accompanied by consciousness, and, furthermore, only those disturbances which are sufficiently *severe* and *novel* have such accompaniments.

Doubtless every hour thousands of little vegetative and physiological changes are taking place in the cortex, whose mental counterpart, if there be any, never rises into the realm of consciousness. The disturbance must be sufficiently severe, the body casting the shadow — to revert to the figure of Mercier — must be sufficiently opaque, to cast a shadow. The disturbance must also be comparatively novel. Disturbances which were at some former time accompanied by the closest kind of conscious attention and adjustment of movements are no longer thus paralleled by consciousness. The lock has worn smooth and no longer catches or screeches. A complex activity once controlled by the highest conscious centers is, through the force of habit, no longer so controlled. Consciousness has been lost with novelty.

The close relationship existing between our neural and our psychical lives is nowhere more clearly seen than in the field of nervous diseases and mental inefficiency. The shuffling gait, the hanging, characterless hands, the open, uncontrolled mouth of the idiot

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or the insane person, are typical signs of nervous disorder and mental shortness.

Quoting again from Mercier, to emphasize this thought from the standpoint of an expert in nervous and mental disorders:—

“It is in fact impossible for mind alone to be disordered. For feelings and thoughts, mental states and mental processes, are but the shadows or accompaniments of nervous states and nervous processes; and since no mental change can occur save as the shadow or accompaniment of a nervous change, so, *à fortiori*, no mental disorder can occur except as the shadow or accompaniment of a nervous disorder. Whenever, therefore, there is disorder of mind, there must be disorder of nervous processes — of those processes which have a mental accompaniment — that is to say, of those which are highest. But the highest nervous processes are those which regulate the movements of the body with respect to the circumstances in the outside world — are, in fact, those which actuate conduct. Hence, when these highest nervous processes are disordered, not only must mind be disordered, but conduct must be disordered also. While, therefore, we find from observation that as a matter of fact disorder of mind is not the only deviation from the normal in insanity, on the other hand we find from the principles already laid down that mental disorder cannot exist alone, but must always be accompanied by disorder of nervous processes and disorder of conduct.”

Enough has been said to show how truly and in what sense there is a physical basis of mental life, psychologically speaking. Once more the practical significance of this fact is what is of chief concern to the teacher and the parent. Such defects as stammering and stuttering are due to nervous affection, and have been entirely overcome by appropriate motor training. Nervousness itself may be due to some local defect, such as weak eyes or eyes out of focus. In such cases a correction of the local defect by glasses or other sane treatment is the only corrective needed for the general defect. General nervousness, inability to control one's self in any way, bodily or mentally, is a condition to be avoided or corrected, regardless of every other consideration. It will be a sign of better days when parents of nervous children are wise enough to take them from school if need be, and let them romp and play in the sunshine and fresh air, and rest quietly alone and away from all causes of excitement and self-consciousness; and when teachers are wise enough to act *in loco parentis*, and will violate the formal programme of the school enough to lighten the burdens of these children, and give them more time for rest and out-of-door exercise. Better that the child should remain

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in sublime ignorance of many things which the schools teach than that he should graduate from them a nervous wreck; and this comes home to us with multiplied significance when we realize that such nervous undoing may, and in many cases does, result in the complete mental undoing of the child.

CHAPTER IV

A CYCLE: STIMULATION, INTERPRETATION, EXPRESSION

AN individual is capable of three things, — he can be impressed; he can reflect, reorganize, reconstruct; and he can express. The mental cycle is sensation, organization, and expression. This "cycle," without setting hard and fast lines, serves to put in the briefest and plainest way the relationship of certain psychological factors.

The raw material of all intelligence comes to the individual as sensations resulting from outer stimulations. It is a generally admitted fact that if a person were denied the use of all the senses from birth on, he would know absolutely nothing. The senses are the avenues through which all the stimulations to intellectual life come. The importance, therefore, of senses which function fully and normally cannot be overestimated even from the psychological and pedagogical standpoints; and one of the large tasks of the teacher is to teach those who have eyes to see, and

those who have ears to hear. The beauties of nature are not yet seen by the children, and the unheard songs are innumerable. The great advantage to come from nature study in the schools is that the children may see the world and hear it as it has never been seen and heard by the people before.

Impression is the first consideration in child development,—this to be followed by reflection, organization, and finally expression. We should seek not a formal, artificial, superficial impression, but a natural impression through the child's senses by the world of nature and art about him. The bane of the school has been artificial impression, to the practical exclusion of everything else.

Teachers direct too much; they explain too much; they, themselves, recite too much; they talk too much. There is far too much of this kind of impression; yet the children do not see, neither do they hear. The consistent, quiet though forceful teacher who has grace enough to keep himself in the background, through his realization that the school is the child's great chance, will find opportunity on every hand to bring the children face to face with real things, to stimulate them to heretofore unthought-of activities, and so cultivate in them not only an interest in nature

and art, but a capacity to see and hear beauty of all kinds, as they have never been able to do before. All school work lends itself more or less to this kind of training, but science proper, manual training, nature study and the fine arts, including music, are especially adapted to this end.

Before these sensations which the child gets from outer stimulations can serve him to any purpose, they must be interpreted, they must be shot through and through with meaning, they must have become significant. And before impressions, which are the direct resultants of significant sensations, or ideas, which are the indirect resultants of such sensations, can serve any purpose in our mental economy, it is necessary that they should be related; that all such comparatively small units of our consciousness should be organized in one fashion or another. This is the second step in the mental cycle as now considered. All the stimulations in the universe will fail to capitalize a person in the mental world unless he reflects, imagines, judges, thinks; unless he organizes himself mentally. Three conditions are primarily essential to the successful performance by the pupil of this process: (1) appropriate stimuli, including direction from the teacher; (2) time; (3) freedom from counter-stimu-

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lations. The first condition may be dismissed, being that already discussed as the first step of the cycle.

The element of time is of vastly more importance than is generally recognized. Observation and experiment both show that time is not only an important, but strictly an essential element in mental organization of all kinds.

The bright child who glances at a lesson just before the class is called, and gathers up enough points to appear well in recitation, has in no sense mastered the things so well as the plodder who has spent hours in preparation, and who in all probability shows to no better advantage in the recitation than the child with a moment's preparation. As a rule, at the end of a day or a week the bright child is not able to recall a single item of the lesson, whereas the plodder who accomplished comparatively little, and this at great expense of energy and time, retains with remarkable accuracy what cost him so much. He thought it over and had *time* to organize it, whereas the bright child, to use a figure, had never more than come tangent to it.

A bicyclist, who was found lying unconscious at the foot of a long hill, was not able to recall afterward anything which had happened a half mile before he came to the hill, while he remembered distinctly his

experiences before this time. The stimuli which came to him through ears, eyes, and skin had not had time to make their mark—had not had time to become organized.

A friend of mine living on a ranch had an exceptionally vicious horse which had to be handled with the greatest care. One day while reading in the house it occurred to him that this vicious animal should be taken from the stable and "staked out" in the pasture. An hour later when the partner on the ranch came home, he found the horse running among the other horses dragging the long rope attached to the halter. Upon investigating, he found my friend in the pasture unconscious from a kick on the head. After he had regained consciousness, he was unable to recall anything which had happened from the time he decided to put up his book and "stake out" the horse. He did not remember how he went to the stable; whether he approached the horse the accustomed way or an exceptional way; what happened on the way to the pasture, or how he lost control of the horse.

Advocates of short cuts in education need to bear in mind the point brought out by these examples. Time is necessary for the stimuli to produce an effect.

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Time is an essential to all training. Because a child is able to accomplish the four years' high school course in two years, it does not follow that he will derive the greatest benefit by doing it in that time, much less does it follow that the high school course should be shortened. There is no sympathy between modern psychology and the recent tendency to shorten and telescope courses of training. We need to bear in mind at all times that the purpose of the school is to exhaust the possibilities of the pupil and not the thing taught. The purpose of the college is to give an opportunity for four years' training. The more capable will get more; the less capable, less.

Two common customs of teachers in the school-room run counter to this theory of time as an essential element in the child's thought processes, and his development in general. One is the "rapid fire" method of conducting recitations; the other is mental distraction induced by the introduction of irrelevant matter in the form of stories and long-drawn illustrations, or by loose, scattering teaching.

The "rapid fire" teachers, and their name is legion, seem to be cramped on the notion that the end of all school work is to get definite, concrete answers to definite questions. If we should judge from the way

they eagerly skip from one child to another in the search for the answer, without giving any one of them time to think at all, we might decide that it has never occurred to most teachers that the purpose of the school is to train children, and we might think that the excuse for the enormous outlay of money in a school system is the answering of questions. Teachers should realize that it isn't criminal to let a child think. They should recognize that not one little question in ten thousand which comes up in the schoolroom will ever come up again; that the little question in itself and the little answer in itself have absolutely no value. They should also realize that there will hardly be an hour in life when some new problem, unheard of and unsolved, will not confront the child, and he will need to be able to think. They need to realize that one large purpose of the school is to give the child an opportunity to learn how to think, and that the only way to do this is to set him to work on great varieties of tasks, such as come up in all the subjects taught, and give him *time* to accomplish them. At the end of all these tasks the child will have accomplished himself, he will have turned out the big answer — a person who can think, and not a multitude of little insignificant, unrelated, vocal or written answers. Many recitations,

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a majority of them, are not productive of a single, well-defined thought by a single pupil in the class. They are little more than rush-and-grab-hold guesses, with the result that we turn out of the schools, year by year, large numbers of rush-and-grab-hold guessers.

The second common error, not to say crime, that is hourly committed in the name of a recitation, is the error of "side tracking" on a story, or of needless and far-fetched illustrations. A class coming from the physical laboratory to the recitation in history does not find it easy to transfer thoughts and attention from the one to the other. The pupils are pulling away from the physics and pulling toward history. They are, so to speak, tied up to the old post and find difficulty in getting away at once. The teacher sees this and doubles their difficulty. He says: "I see that you can't get your minds on history; let me tell you a story," and away he goes on something, related neither to physics nor to history. The class is now tied up to two posts, physics and the story, and it is practically impossible to secure any history thinking. Any subject that needs to be taught in this way should be removed from the curriculum; any good teacher who needs to teach a particular subject in this way should be removed to another part of the curriculum;

and any teacher who teaches this way in general should be removed from the profession.

This illustration applies as well to the third point of counter-stimulations. Time will accomplish little for the child if he is subjected to numerous and strong counter-stimulations. Herein lies the excuse for many requirements upon the school, such as regularity, punctuality, and quiet. Irregularity, tardiness, and noise not only affect the person directly responsible for them, but disturb the school by distracting from the work in hand. The teacher should be careful himself not to serve as a counter-stimulant. The high school teacher who changed gowns practically every afternoon had allowed a professional virtue (that of neatness and attractiveness) to develop into a professional vice. Her students were unable to think history ; they were thinking about the teacher's many pretty clothes. It is much worse where the counter-stimulant is the teacher's high, harsh voice continually talking and scolding.

And then comes expression. It has been said that if all the class has thought the work through, it makes but little difference which member of the class recites ; this of course is not true. Ideas tend to express themselves. This has come to be a familiar tenet of

psychology. It is true and fundamental. There is, however, another psychologic fact just as fundamental and true, but not so familiar, viz. that our expression of an idea tends to define and clarify it, and at the same time determines more or less the direction and strength of the ideas that follow. A fact never to be forgotten is that the life to be expressed is affected by the expression just as truly as the expression is affected by the life to be expressed. Students should be encouraged to express themselves. The opportunities for expression in the schoolroom should be numerous and varied — opportunities for oral expression, written expression, drawing, music, manual training of all kinds. Three opportunities, then, the school should afford the student — an opportunity for varied stimulations to useful mental activities; an opportunity for mental digestion, mental assimilation; and greater opportunities than have heretofore been given him for fullness and richness of expression.

CHAPTER V

HABIT

THE word *habit* is worn threadbare. It is a much-used term in ethics, psychology, religion, and common talk. Many new and true things have been said about it in these last days, and many trite and commonplace, albeit more or less true things have been said about it for no one knows how long. All this in a way argues the importance of the subject and the unique and central place it occupies in the minds of the people, although its scientific significance is not generally understood.

Habit makes for conservatism ; it makes for stability in the individual or social group, in the school or in the state. The new pair of shoes in the store is anybody's or nobody's. It is equally well suited to any one of a thousand men. Not so after the shoes have been worn by one of the thousand for a week ; then they have become that man's shoes, and it is practically impossible for them to be properly adjusted to any one else. They have taken an individual set

— they have taken on character ; they have chosen, so to speak, to be such and such shoes, and the other nine hundred and ninety-nine original possibilities have been lost — lost in the realization of this one actuality, in the formation of this one definite, specific character. So it is with a human being or a social group, however large ; and well it is that it is so. Herein lies one's hope and one's doom, either of which is one's own make.

The biologic basis for habit is the principle found in all matter, that things tend to act as they have acted. They not only tend to do the things they have heretofore done, but they tend to do them in the same way. This is especially true of the nervous system, which has a plasticity that yields readily to impressions and retains them with great accuracy and completeness. The fact that the nervous system has done a certain thing in a certain way constitutes an excuse for the performance of this thing in the way it was previously performed — this is true of a thought, an act, or an emotion. Many men are the perpetual slaves of vile thoughts, because in youth they allowed their minds to dwell upon vile things. The work of many men is poor and ineffectual because in youth they were allowed to go about their work in a weak, vacil-

lating, and halting way ; and the emotions of many men are their masters because they were not properly restrained in childhood and youth. But many a man is a tower of strength because his years have been given to the highest and noblest types of thinking, to the performance of deeds worthy a child of God, and to emotions which appropriately accompany such behavior. When a person decides upon a course of action, he not only chooses this one particular thing, but he chooses what particular tendencies he will set a-going in his life for all time. He not only decides what manner of man he shall be for the time being, but he establishes tendencies which will help to determine what manner of man he shall always be.

The advantages resulting from habits which are the allies of one's well-being are many and great. *Habit simplifies movements.* In harnessing a horse for the first time a boy makes several times as many movements as he will make six months later ; in dressing his feet a baby makes more movements and expends more energy than will be necessary finally to dress his entire body. When first put up to the table, the young child seeks his food with hands, body, and feet. He is not able to sit quietly and reach out one hand for his food. Movements at first are very complex

and many of them quite superfluous — not so when they have become habitual.

Habit makes for accuracy. At the end of six months the boy not only harnesses the horse with fewer movements and in much less time, but he is more apt to have it done right, to have both holdbacks and both lines fastened. He has become accurate, makes fewer mistakes, is more trustworthy. The baby has learned to feed himself with one hand and misses his mouth less often. He is a sure shot. Feeding himself has become habitual and is done with accuracy, and so it is with all processes that are subject to habit. A person never walks well while he is learning to walk, nor later if he thinks about the process while performing it. Conscious gestures and voice modulations are never so graceful and effective as they should be. There was a time when the skilled pianist consciously attended to the music, the keyboard, and his hands, but no longer is he obliged to do so. He could not perform if he should try to do so. The hierarchy of habits that has been set up takes care of most of the performance, and does it in a way entirely impossible for the higher conscious life — the life of conscious control.

Habit reduces the amount of fatigue resulting from

certain activities. This is due partly to the fact that the habitual activities are simpler and more accurate, and thus the number of necessary movements is reduced; but it is not entirely due to these things. After an out-of-door vacation of three months the student becomes fearfully fatigued during the first days of school. After ten months of school the student becomes greatly fatigued for the first days of vacation if he takes up any ordinary form of manual labor. In a little while he will be able to labor all day, week in and week out, without great fatigue. The movements have in a certain sense become habitual. The child practicing at the piano cannot stay there for long at a time, but the trained, practiced, habitual pianist will play with little fatigue for hours at a time.

Habit makes for conservatism. The bright young fellow whose schooling has been limited to a few months during childhood, seems happy and contented as he goes about his daily task of drudgery. He personally knows no other life; this one has become habitual to him; it practically never occurs to him that another is possible. Professor James in his "Psychology" puts it thus:—

"Habit is the enormous fly wheel of society, its most precious conservative agent. It alone is what keeps us

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all within the bounds of ordinance, and saves the children of fortune from the envious uprisings of the poor. It alone prevents the hardest and most repulsive walks of life from being deserted by those brought up to tread therein. It keeps the fisherman and deckhand at sea through the winter; it holds the miner in his darkness, and nails the countryman to his log cabin and his lonely farm through all the months of sorrow; it protects us from invasion by the natives of the desert and the frozen zone. It dooms us all to fight out the battle of life upon the lines of our nurture or our early choice, and to make the best of a pursuit that disagrees, because there is no other for which we are fitted, and it is too late to begin again. It keeps different social strata from mixing. Already at the age of twenty-five you can see the professional mannerisms settling down on the young commercial traveler, on the young doctor, on the young minister, on the young counselor-at-law. You see the little lines of cleavage running through the character, the tricks of thought, the prejudices, the ways of the shop, in a word, from which the man can by and by no more escape than his coat sleeve can suddenly fall into a new set of folds. On the whole, it is best he should not escape. It is well for the world that in most of us, by the age of thirty, the character has set like plaster, and will never soften again."

Habit is the basis of practical faith in things and men.
Without any question of the ceiling falling in upon us,
we daily assemble in large numbers in recitation rooms,

churches, and lecture halls. We have been in the habit of doing this and the ceilings have been in the habit of keeping their places. We never stop to question the probable risk of doing such a thing. Unless the danger signal is up, we cross bridges without taking thought. We have done this without question so long and the bridge has kept its place for us so faithfully that we put implicit, although probably not conscious, faith in its proper behavior and our ultimate success in crossing it again. Most men generally speak the truth. The habit of the people is to make their language represent more or less accurately the facts which they profess to portray or to express. My behavior is largely based upon my faith in such habits of the people. I make my arrangements to leave town at the hour announced by the time-table. I dress for dinner at the time announced by the hotel directions. I attend church at the hour announced. I believe that the scheduled thing will happen at the time set. I believe that men have told the truth; that, in such matters at least, the habit of the people is to tell the truth, and I express my practical faith by acting accordingly. I give notes and take notes; I give deeds for property and take them; I pay life insurance and my rent in advance because I believe

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in certain faithfulnesses on the part of individuals and organized societies ; and this faithfulness is based upon certain habits of action by individuals and organized societies, which I have repeatedly observed.

Habit makes for progress. Paradoxical as it may seem at first thought, all progress is based upon conservatism, upon holding the ground already gained. If we did only new things as the new days come, or if we did old things in new ways only, we should accomplish little and progress not at all. The great ball pitcher, the great organist, the great accountant, the great executive, is not the person who tries one thing one day and another the next, but is the person who selects out of the many possible ways the one best suited to himself and his work, and does it that way day after day and year after year. All hope of progress lies in conserved habits, in dismissing to the lower centers activities which were formerly under the direction of the higher, conscious control, thus leaving the higher centers free for more advanced and complex work. There is no hope for the student of mathematics so long as he does the multiplication table with his higher centers ; such an alphabet of the subject should have gone down, and the head should be free for the relations of the problem. There is no hope

for the public speaker who is obliged to attend consciously to the grammar and pronunciation of his speech; such things should have become habitual, and the lower centers should be unerring in producing the right form of expression. And the man or woman who cannot strike off at once the answer to most practical moral questions as they arise from day to day is greatly handicapped. The habit of appropriate reactions should be so deeply ground into the individual that decisions upon such matters will be prompt and correct.

Now habit, in all these respects which we have been considering, may make or mar the individual, and which it shall do depends upon one thing only, viz. whether these habits which are more than "second nature" are for us or against us; whether they are our allies or our enemies. They are equally powerful whichever way they pull. If they pull with us, for our highest good, who or what can successfully stand out against us? But if they pull against us, where in all the earth can we gain reënforcement strong enough and steadfast enough to help us win the battle against them? One large standard, at least, is here set for the parent, the teacher, and the more mature student.

CHAPTER VI

THE PSYCHOLOGY OF WORK

IN writing to the Philippians St. Paul in one of his letters admonished them to work out their own salvation with fear and trembling. He realized, and wanted them to realize, that much of a man's fitness for salvation is brought about by the work he does; and so in the epistle of James, he says, "Faith without works is dead." Fundamental as is faith in the accomplishment of merely temporal ends, to say nothing of the Kingdom of God, he realized that under normal conditions the measure of one's faith is the work which results from it.

Psychology says at least this much: "One's temporal salvation and one's final fitness for eternal salvation are determined largely by the work one does, the motive behind it, and the spirit carried into it."

A person is as large as the thing he does, but no larger. One's own doing is the expressed side of his life, and this is the only side that can be read, and, therefore, the only side to be spoken of by the psy-

chologist with any degree of assurance. Aside from a person's inheritance, which is always an important factor but one over which he has no control, his physical, mental, and spiritual development and efficiency are directly due more to the work he does than to all other things combined. One's trade or profession finally settles down all over him and the marks of his calling are unmistakable. In the process of forging out a piece of the world's work he has forged out his own particular manner of man.

The old educational maxim, "We learn to do by doing," has a whole truth, a half truth, or a whole falsehood in it, depending entirely upon one's interpretation. If it means that we learn to do certain definite things by doing those things or other very closely related things, then it possesses a whole truth. If it means that we cannot learn to do anything unless we actually do something, it possesses half a truth. It is correct in its assertion of the importance of doing, but is not defined in its objects. But if it means, as probably most teachers have interpreted it, that we learn to do *anything* by doing *something*, it is not only void of truth, but positively false.

So far is it from being true that we get general doing ability by doing some one thing well, that the truth

is diametrically the opposite, viz. that by doing certain definite, specific things well, we to a certain degree become incapacitated for doing other definite, specific, but unrelated things well. The field for illustration here is wide. Bergström has shown this truth by the use of cards. A stack of different figured cards, after being carefully shuffled, was thrown in books, each book containing all cards bearing the same figure or sign. The plan was to find in what length of time he would be able thus to throw the cards. During the first series of trials the books always came in the same order, say—1, 2, 3, 4. At the end of each trial the time was noted, and after the subject had rested, another trial was made. The point, of course, was to reach the minimum of time and maximum of skill in doing over and over again this one thing in exactly the same way. A little progress was noticed from beginning to finish, but there came a time when repeated efforts resulted in no gains, and so this first series of the experiment ended. After ample time for complete rest from fatigue, a second series of trials was made, with the introduction of but one variation; this time the order of the books of cards was different. Instead of 1, 2, 3, 4, the order may have been 2, 1, 4, 3. Here was the same subject with the experience com-

ing from his first long series of trials doing practically what he had before been doing time and time again. What we find is instructive and significant, viz. that the first time the cards were thrown in the second series the time required was *greater* than for the first trial in the first series; and so throughout the entire second series, each trial required more time than the corresponding trial in the first series. Furthermore it was found that to reach the minimum of time and maximum of skill in the second series required more trials and more time than in the first. Here we find a man to a degree handicapped in doing a thing which was very closely related to what he had been doing. He would have done better at the second task had he not done the first at all.

In athletics a promising sprinter, who is transferred from the sprinting event to the pole vault event, finds that after a season of faithful, consistent training for pole vaulting he requires more time to make the hundred yards dash. It might be supposed that since he had spent the year in systematic training as an athlete he would, at all events, hold his own as a sprinter; but not so — new movements have been formed at the expense of old ones, new muscular combinations have been confirmed and he is to a degree an incapac-

tated machine for any performance except the one for which he has taken definite training. What one does — one's work — settles down all over him like a plaster of Paris cast, or all through him like iron in the blood, and so it comes to be that a person is as large as the work he does.

In personal development there is no substitute for work. The great artists have known this, and among the greatest of them have been men who not only put the finishing touches upon the stone, but actually quarried the stone from the mountain side. We speak of brainy statesmen, ministers, financiers. No one who has brains will doubt that brains count, but a truer way to classify such men would be upon the basis of industry. Of course our greatest statesmen, our wisest and most influential churchmen, and our most successful business men are men of brains, and yet I fancy that they do not have a corner on the brains in their particular fields of activity; but we can hardly find their equals in energy, in the amount of work they do. Many a man, deservedly unheard of, has started with as good brain capital as any of these, but has failed to realize upon himself through hard work.

There is no substitute for hard work. Luck is no substitute. Brilliancy is no substitute. The man who

is doomed to be unlucky is the one who believes in luck; and what is apt to prove one of the greatest curses in the world is the so-called blessing of versatility — the ability to do, without training, many things passably well. Such a versatile man is, as a rule, doomed to mediocrity, doomed to be a dabbler in many things and a success at none. Being able to do any one of many things fairly well, he too often prefers to change from one to another, when he finds himself outclassed by those who are especially prepared to excel.

The success which many men with limited "schooling" have had is due more than to anything else to habits of systematic work at something that is worth while. Many a listless, careless student would receive greater help, better preparation for his life's work, if he were taken from school at once and put to a task that demands application and thoroughness. Unless the school offers opportunities for such application and thoroughness and insists upon the student's living up to his opportunity, it misses its main chance in *child saving*.

When Booker T. Washington reached Hampton Institute, he was such a sorry specimen that it was questionable whether he should be admitted. It was

the recognized mission of the school to reach down and out, to bring in and teach the poor and ignorant black people, but the reach to Washington seemed a long one indeed. He persisted, however, and was finally given a chance. In telling of his introduction to the Institute, Mr. Washington has said:—

“When I reached Hampton and presented myself as a candidate for admission to the school, the instructors who saw me at first were not at all certain that they cared to enroll me as a pupil, a fact at which I do not wonder as I remember the appearance I must have presented to them. It had taken considerable time for me to make the journey over the mountains. I had walked a good share of the way, and had often slept in barns, before I had occupied my lodging under the sidewalk in Richmond. My clothes had been none too good when I started; they were much worse when I reached my journey’s end. I wanted to stay, and pleaded to be allowed to do so! I said I would work. They wanted to know what I could do. I told them what I had been doing. Finally one of the instructors took me to a room which needed sweeping, gave me a broom, and told me to see how well I could clean the room. I suppose that I swept and dusted that room as many as four or five times before I was satisfied with it. Then one of the lady teachers came and inspected my work, and reported that it was satisfactory. That was my entrance examination. I passed it successfully, and was allowed to stay.”

But where had Mr. Washington been prepared for the examination? Listen to his own words: "Not far from here, Charleston, in the family of a noble white woman whom most of you know, I received a training in the matters of thoroughness, cleanliness, promptness, and honesty, which, I confess to you, in a large measure, enables me to do the work for which I am given credit. As I look over my life I feel that the training which I received in the family of Mrs. Viola Ruffner, was a most valuable part of my education."

There can be no doubt that the magnificent work which Booker T. Washington has done for his people, and incidentally for his country, is the direct result of this early training in the systematic and complete performance of every task, however menial. There is positively no substitute for consistent, persistent hard work at something that needs to be done.

Professor Hodge, of Clark University, found that tramps set to odd jobs about the house or grounds know practically nothing about work; they do not know how to do anything right. I do not mean to say that the schools are responsible for this. I mean to say only that the shortage of character in these cases is the more or less direct outcome of improper training in childhood, of failure to learn to do things

and do them well, and that this hints strongly at what the school might attempt to do in order to forestall such results.

Those who have been most successful in the reformation of youthful criminals have magnified systematic work as a curative for criminality. Generally speaking, the plan has been for the superintendent or director to ascertain as fully as possible by all legitimate direct and indirect means just what is the convict's capacity for work along different lines, intellectual, mental, or physical. This comes first, and sufficient time is taken to do it well. Then certain tasks known to be within the capability of the convict are assigned, with the directions, stated or implied, that they are to be accomplished to the best of the workman's ability. Here exceptional judgment and firmness on the part of the superintendent are required. The convict soon learns that dinner time, or supper time, or bedtime never comes until the task is done satisfactorily; done in such a way as to satisfy the superintendent that it has been done as well as the given convict is able to do it. Years of this sort of discipline result in two things: (1) ability to do certain things better than the average citizen of any community can do them, and (2) therefore, liking for

tasks and interest in doing them. In ninety per cent of such cases the reform is accomplished when this twofold result has been attained — skill in doing something and interest in it. The business of the school is formation, but if it would bear in mind this twofold ideal, there would be less need for reformation later in the child's life.

One thing that should never be lost sight of in all training is that the greatest thing done, the most important result reached in one's work is the accomplishment of the *worker*. The largest thing a person does in all his doing is the making of himself. When a child has been allowed to loaf through a school course, his attainments are not what they should be, but this is of comparatively little importance; the important result is that the habit of loafing has been confirmed, and the school turns out a loafer and not a worker — it turns out one whose tendencies are toward trampdom and not toward productive, independent citizenship.

Regardless of the particular course of study a child follows, his own making or unmaking depends upon the completeness and exactness of performance, and the absence of mere approximation. And so it is in regard to the much-mooted question of change of curriculum. No doubt many adjustments need to be

made, but this never can be a question of more than secondary importance. The thing of overshadowing, all-pervading importance, let it be repeated, is completeness and exactness of performance. This is the kind of work that accomplishes the workman. When people grasp this fact, they will from sheer selfishness, if from no higher motive, do their best; it will be a matter of self-preservation and self-realization with them to do fully and perfectly everything they undertake. Then the superintendent can take up his office duties, confident that there will be no shirking teachers; then the shopper will be sure of full measure, and the housewife need not worry about adulterated food stuffs. When people fully realize that every time an arm is reached out (literally or figuratively) to do a thing, one end of the arm is attached to the doer and works upon him as truly as the other end works upon the canvas or the washboard, they will begin to appreciate the reflexive effect which work has upon the worker — they will see how much one's own character is the direct answer to one's own life of action or behavior. For such an individual work will at once become a means to character as an end, and people will set about to work out their own salvation with fear and trembling.

CHAPTER VII

MEMORY

No question in the entire realm of psychology has received so much attention as memory, and probably no subject in the fields of both science and speculation has been more erroneously discussed.

To get at anything like an accurate conception of memory, two things at least need to be noted: (1) *People differ very greatly in their ability to recall isolated, disconnected events or things.* Some people with apparently little or no effort recall dates, places, names, and all kinds of disconnected matters. This is what Morgan calls Desultory Memory. Those who can do this thing in this way have always been able to do it; they have not acquired it. They do not know how they do it. There is no "how." If there were, it would no longer be Desultory but would become Systematic Memory. The "how" makes it Systematic. It follows that Desultory Memory cannot, as such, be cultivated, for cultivation introduces

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a method, which constitutes it at once as Systematic and not Desultory. (2) *Memory is a resultant.* Memory is not positive in the sense that it is a faculty or an activity with which we do something. Memory is, to put it flatly, what happens because something else has happened. It is the answer, the fruitage, the resultant. Memory does not stand on its own feet, so to speak. It cannot in itself be cultivated. Memory training, at least, is a misnomer. Memory never has been trained and never will be trained. It is a resultant and not a process. In training children in accuracy and speed in addition, the training comes in the process of arriving at the answer and not in the answer itself.

Individuals, of course, vary greatly in their power of retentiveness due to difference in nervous plasticity, which cannot be changed. The problem of good retaining for a given individual is nothing more or less than the problem of good getting. Good getting by the pupil implies good teaching by the teacher. In general, good getting and good teaching consist of two things only — *the application of the subject under consideration to all sides of the child, and the application of all sides of the subject to the child.* This principle must not be overlooked. Some subjects lend them-

selves to much more varied treatment than others. The wise teacher will see the limitations of each.

First, then, as far as possible, the subject should appeal to all sides of the child. Many city born and bred children, while in school, know the definitions and uses of our common agricultural plants, and many of them know, in a general way, plant distribution throughout the world; but their information, if such it may be called, does not stick, and we say they do not *re-member* well. Our diagnosis is wrong. They did not in the first place *member* well. If the subject had been taught in such a way as to appeal to all sides of the child, he would not have forgotten it. He could not have forgotten it. If the child could have seen, tasted, smelled, and handled these agricultural products, and actually have witnessed the use to which they could be put, if the processes of preparation had been adequate, the information would have stuck. He could not by any effort have forgotten it. And then we should say that he remembers well, which of course is true; but the large truth psychologically is that he had *membered* it well in the getting, with the result that he could not forget it. Memory is a resultant. Good holding depends upon good getting.

Second, all sides of the subject under consideration

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should be presented to the child if we expect him to grasp it, and so retain it. The child should see the thing in all its relations — the relations of place, time, cause and effect, whole and part. Much of the history work in schools, for example, is lost because each subject is taken up as a separate, isolated topic in no way related to what has gone before or to what follows; and then children are credited with having poor memories for history. We expect them to *re-member* things which had never been *membered*. We expect them to hold things which they never had. We expect them to retain things which they had never attained.

As the Constitution of the United States is usually taught in our public schools, not one child in a thousand remembers a single thing that is worth while. He has not known anything worth while. He may have committed the document to memory as he would a declamation, but that is far from knowing it. To know a thing is to get it in its relations. What were the forces which made it, and what were the forces which it made? What was peculiar to the place and time which made the thing practically inevitable? Of what larger movement is it a part and what are the important parts or phases of it as a movement?

A presupposition for remembering the Constitution is that it should have been known, and a necessary condition for knowing it is that it should have been seen in its relations. All sides of it should have appealed to the learner. The Constitution must be seen as the general instrument of government resulting from hundreds of years of conflict and development. In it must be seen the old navigation laws, the Stamp Act and its repeal, the Mutiny Act, the Colonial and Continental congresses, the Boston Tea Party, the Boston Massacre, Lexington and Concord, Bunker Hill, the Declaration of Independence, the Articles of Confederation, the numerous attempts to remodel the Articles, Valley Forge, the surrender at Yorktown. Unless these things can be seen as contributing finally to this result, the spirit and genius, and therefore the significance, of the Constitution are lost; it is not comprehended and so is not retained.

And likewise the significance of the Constitution cannot be comprehended unless we know it as the instrument of government under which our history as a nation has been made. The questions which have arisen in our national history are to be determined in the light of this general instrument of government, and the Constitution itself can be understood only as

we see its mark upon all important questions of state since its adoption. The only way to know a law fully is to make it operative. So it is with the Constitution, the general law of the land. It not only stands as the great generalized effect of the years that had gone before, but it stands out as the great semi-cause of the events which followed. The Kentucky and the Virginia Resolutions, the Hartford Convention, the Missouri Compromise, the Monroe Doctrine, the Acts of Nullification, the Wilmot Proviso, the Omnibus Bill, the Kansas-Nebraska Act, the Dred Scott Decision, the Act of Secession, Reconstruction, the Income Tax, are all constitutional questions, and no one can know the Constitution who does not see its marks on all such questions.

This illustration has been given thus fully, not as a lesson in history, but in order to show what is meant by presenting a topic in its relations. The purpose is to illustrate one phase of the Psychology of Memory, viz. that good holding depends upon good getting; and that one phase of good getting consists in presenting to the learner the subject under consideration in as many of its relations as possible.

Other things being equal, vividness, recency, and repetition in presentation strengthen retention. Through

vividness, one remembers his first sunset at sea, the features of his first-born child, his veiled bride, the agonized expression on the condemned man's face. The emotional tone was such that the experience burned itself in at once, never to be lost — because of the way in which it was gotten. Recency is an important factor only in that things have not had time to fade out since their acquirement, and repetition means nothing more than getting the same thing over and over again.

If good getting, full comprehension, is the secret of good retention, it becomes apparent at once how important it is that the avenues for the transmission of the raw stuff of information should be kept in their normal state. The child's eyes and ears should be as much the special care of the teacher as the recitation or discipline; even more so, for these are fundamental; they are the presuppositions of all intelligence and should, therefore, be the first concern of parent and teacher.

A great deal has been said about eye-mindedness — ability to recall visual images, and ear-mindedness — ability to recall auditory images, to say nothing of olfactory, gustatory, and motor images.

People vary greatly in their power to image in terms

of the various senses. Professor James gives the case of a man who could not get the visual image of his family at the breakfast table. He *remembers* the order in which they sit at the table, but cannot, as we say, see them. He has no image. Many of my own students cannot image their mothers' faces. They remember that they have dark or light complexion, that they are of a certain height, that they have such and such features, but they have no distinct image. Others, however, think that the image is almost as complete and vivid as the impression itself. Many who have poor or no visual images have well-developed auditory images, and many, of course, have not. Many of my own students are sure that they have gustatory and olfactory images, but as many are just as sure that they have not. Practically all have motor images, but in varying degrees of perfection.

In pedagogy more attention has been given to the various types of mental imagery than should have been. It does not follow that because a child is strong in one type, he should be developed along this line. If mastering a topic is the aim of school work, if this is the end of education, of course let the child do it in the easiest way; but if the aim of school work, the end of education, is the development of the child, the

easy method of mastery might very well defeat the end. Because a child is "born long" at one place and "born short" at another, it does not follow that he should be made longer at the long places and shorter at the short ones. If the all-round development of the child is the thing to be attained, it might be better pedagogy to train him where he is short. The objective results in the way of subject-matter mastered would be less satisfactory, but there should be more of child saving. Furthermore, Halleck has wisely called our attention to the fact that the data, for example, for visual imagery are not necessarily or usually gotten through the eye. The child *hears* a vivid description of the streets of Yokohama and at once forms a visual image of the city. Knowing that the child is rich in visual imagery, we cannot assume that this imagery is the result of teaching through the eye.

The only safe and sane attitude to take is that the child starts with a given capital, and that he, the center of the educational process, is to be made strong at as many points as possible; that the way to do this is not to appeal constantly to him where he is long, neither where he is short, but to present the work in such a way as to appeal to as many sides as possible.

Systematic Memory has its basis in the laws of asso-

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ciation; psychical association depends directly upon the physical habits of the brain; the physical habits of the brain are determined by its plasticity and the variety of its stimulations. Neurology teaches us that the native plasticity of nervous matter cannot be changed. It follows, therefore, that our only means of affecting the memory is through the variety of stimulations. The greatest variety comes through the double process of letting the thing appeal to all sides of the individual, and by letting all sides of the thing appeal to the individual. Such a process is good teaching by the teacher, which is the most he can do toward good getting by the pupil; and good getting is the most the pupil can do to insure good retention. Such is the only legitimate memory work that can be done in the schoolroom.

CHAPTER VIII

ARRESTED DEVELOPMENT

MODERN science has shown that there are times in the development of all living things — plants, animals, and people — when certain things can be done better than they could ever have been done before, and better than they can be done at any future time; that there are certain “ripe times” or “nascent stages” in the careers of all living things, and that if these stages are not recognized when they manifest themselves, the tendency is that their advantages will be lost. The individual will lose his appetite or desire, or he will lose his aptitude, and it may be that he will lose both his appetite and his aptitude. If the broken arm is not exercised from day to day, but is allowed to remain in the sling week after week unused, there will come a time very soon when it will have passed all possibility of ever functioning normally again. If the twig that grows through the fence is allowed to do so year after year, there will come a time when it is forever too late to make it grow straight. There was a

time when the kinks might have been straightened out, but failure to seize upon this time doomed the twig to become a crooked and unshapely tree. This principle manifests itself alike in those things which make for strength and those which make for weakness.

Spalding found that if chicks coming from the shell should be hooded at once, and not allowed to exercise the instinct to feed themselves within the first few hours after hatching, they would require a longer time to learn to feed themselves than if they had not been hooded. He found that the extra time required for this accomplishment was exactly proportional to the length of time the chicks remained hooded. He says:—

“A chicken that has not heard the call of the mother until eight or ten days old, then hears it as if it heard it not. I regret to find that on this point my notes are not so full as I could wish, or as they might have been. There is, however, an account of one chicken that could not be returned to the mother when ten days old. The hen followed it, and tried to entice it in every way; still, it continually left her and ran to the house or to any person of whom it caught sight. This it persisted in doing, though beaten back with a small branch dozens of times, and, indeed, cruelly maltreated. It was also placed under the mother at night, but it again left her in the morning.”

In the laboratory at Clark University I have confirmed practically all of Spalding's experiments upon this point. The only legitimate conclusion to be drawn is that if young chicks are prevented from acting upon even so fundamental an instinct as feeding themselves when the instinct first manifests itself, the tendency will be for them to lose the instinct entirely. This is doubtless just as true of the young of all animals. I have on record many cases of a similar kind as applied to children in their development.

Professor James makes the following observations:

"If a boy grows up alone at the age of games and sports and learns neither to play ball, nor row, nor sail, nor ride, nor skate, nor fish, nor shoot, probably he will be sedentary to the end of his days; and, though the best opportunities be afforded him for learning these things later, it is a hundred to one that he will pass them by and shrink back from the effort of taking those necessary first steps, the prospect of which, at an earlier age, would have filled him with eager delight. The sexual passion expires after a protracted reign; but it is well known that its peculiar manifestations in a given individual depend almost entirely on the habits he may form during the early period of its activity. Exposure to bad company then makes him a loose liver all his days; chastity kept at first makes the same easy later on. In all pedagogy the great thing is to strike

the iron while hot, and to seize the wave of the pupil's interest in each successive subject before its ebb has come, so that knowledge may be got and a habit of skill acquired —a headway of interest, in short, secured, on which afterward the individual may float. There is a happy moment for fixing skill, for making boys collectors in natural history, and presently disectors and botanists; then for initiating them into the harmonies of mechanics and the wonders of physical and chemical law. . . . In each of us a saturation point is soon reached in all of these things, the impetus of our purely intellectual zeal expires, and unless the topic be one associated with some urgent personal need that keeps our wits constantly whetted about it, we settle into an equilibrium, and live on what we learned when our interest was fresh and instinctive without adding to the store. . . . If by chance we ever do learn anything about some entirely new topic, we are afflicted with a strange sense of insecurity, and we fear to advance a resolute opinion. But with things learned in the plastic days of instinctive curiosity we never lose entirely our sense of being at home."

For years I have asked teachers to report cases which have come within their personal knowledge, of children who at some time had given evidence of peculiar strength or liking for some particular kind of activity, but who were prevented from developing in this line, with the result that the strength or the liking,

or both, were lost. Most cases come within the fields of drawing, the rudiments of art, and music. Two typical cases are as follows:—

“When I was a young child, I showed such skill in drawing that my friends predicted that I would develop into a great artist. When I entered school at the age of six, my parents told me I must not draw pictures in school. I found the book work in school dry and uninteresting, and I fell to drawing pictures. The teacher told me that school was no place to draw pictures and that I must study my book. I did so; but from time to time I relapsed until the teacher punished me severely. I desisted from drawing the remainder of the school term, but suffered a relapse at the opening of school the next year under another teacher. My experience this year was similar to that of the year before. My father and mother insisted that it was very wrong to draw pictures in school and often repeated the school punishment. I finally gave it up altogether and did not draw another picture for more than six years. When I finished the common schools, I was licensed to teach and taught one year before going to the Normal School. One requirement in the geography work at this normal school was map drawing. I was obliged to draw the map of North America. My map was a good one. I had not lost my skill, but I have never done a piece of work in school or out of school that I disliked to do so much. I have not drawn a picture or map since and shall never do so unless required to do so as a student. I hate

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the very thought of drawing or anything that pertains to it."

Surely this child had been compelled to sin away her chance. Another teacher gives the following:—

"I knew two little girls ten years of age who were cousins. When I became acquainted with them, both could sing well and both were very fond of music, vocal and instrumental. Both wished to take lessons on the piano. Apparently the parents in neither case were able to purchase a piano and employ a teacher. In a short time, however, the parents of one child did so, and for eight years, in addition to her school work, which has been exceptionally strong, she has been a close student of the piano, and has developed into an accomplished pianist, finding her greatest pleasure in her music. The parents of the other child would not do this. The piano cost too much and it made too much noise anyway. When their daughter grew to womanhood, she might purchase a piano with her own money if she wished to do so. For years she begged for the opportunities of her cousin, but to no effect. To-day she knows practically nothing about music and the pity is she cares nothing for it."

Every one knows with what facility a young child will pick up the mother tongue under normal conditions, and how readily a young child will pick up a foreign language when living in a foreign country.

It is a matter of common observation, however, that a child born of German parents and brought into an English-speaking country in infancy has the same difficulty in adulthood in mastering the German language that an English-born person has, unless German has been the language of the family; and it is also a matter of common observation, especially in college and university life, that people who do not begin the study of the foreign languages until after maturity have, as a rule, great difficulty in getting a good working knowledge of them, and very few ever become proficient. School superintendents and teachers should have this in mind in planning courses of study, and introduce the study of foreign languages into the course very early. In the United States the age of ten is not too young to begin such work. Students need to bear the same fact in mind, and thus avoid the postponement of language work until it is too late to do it with comparative ease and proficiency.

The study of religious experience shows that this same principle holds true there as elsewhere. More than eighty-five per cent of the people who take the stand for higher life through conversion, by coming into the church or in some other way, do so between the ages of thirteen and nineteen. These early years

seem to be ripe years for such experience. Never in the life of the individual has there been such a ripe time for such experience, and never again will there be. Men grown old out of the faith are able almost invariably to look back to their "teens" when they had the inward promptings to a "higher life," but through failure to act upon such promptings they finally lost them.

Observation and experiment confirm the judgment that in all forms of life and in all life experiences there are times when certain things can be done better than they ever could have been done before, and better than they can ever be done in the future. Furthermore, that if the ripe time or nascent stage is not acted upon, the tendency, at least, will be for the liking or the aptitude for the particular activity to be lost. In many cases both are lost.

In the schoolroom two very common ways of inducing arrest of development are: (1) The grafting of too complex forms upon a comparatively weak and undeveloped nervous system, or mind, *i.e.* by crowding the pupil beyond his years and his mental and physical strength. There seems to be little doubt that the child can, through pressure, bring into use stored energy, vital force, which should be held in reserva-

tion for future years, for growth or functioning. This is, of course, nothing more or less than killing the goose that laid the golden eggs. If the little girl burns up the blood in her cheeks through self-consciousness, she can't have it for her children when she reaches womanhood. (2) The holding of pupils too long to simple forms. Kindergarten methods are good only for young children. The child who is taught to think in the concrete is doomed as a thinker if he is held too long to the concrete.

It is true that no one can progress who has not mastered the rudiments of his business, but it is equally true that no one can progress who knows only the rudiments. The novelty and the interest in much school work are lost by moving too slowly and repeating too often. As the child develops, the thing he does must develop in complexity and difficulty, and if he is held too long to the simple forms, the tendency will be for him to become "simple-minded."

CHAPTER IX

INTEREST AND ATTENTION

IN recent years no subject has received so much attention in educational circles as that of interest. With many it is made the center of the entire process of education. The Herbartian psychology and pedagogy, so widely represented in this country, have emphasized the importance of interest, and the movement known as child study has brought out with equal emphasis the need of directing our work along the lines of the natural interests of the child. So far as is known by the writer everything that has been said on this point by both of these schools of pedagogy is true and worthy of attention. Every one knows that close and continued attention is conditioned by the amount of genuine interest one has in the subject, and so it is considered good pedagogy for the teacher to observe and study her children enough to find out what are the primary interests at different ages and of different children. It can be seen at once that if this principle were carried out in the extreme, it would mean

individual teaching for every child. But, on the other hand, it is thought that great good is derived by the child from work in the class. Perhaps not quite so much Latin or arithmetic will be acquired as under the individual plan, but the good derived from the class associations, the give and take, the performance of tasks in the presence of one's associates, surely has as great value for the child as the few additional chapters in Latin or pages in arithmetic which he might have mastered working alone.

It would be rash to suppose that the interests of all the members of a class or even of any two members are identical, however well the classification be made. This means at least two things. In the first place, classification should be as flexible as possible so that the child's natural interest will not be entirely crushed out of him. In the second place, if the child derives a benefit from class work to be gotten in no other way, he must apply himself at times to work in which he does not find a very great interest.

In the child's play, it has been argued,—and justly, I think,—the spontaneity of the child should be recognized. The play ideal for young children is unhampered, unorganized, undirected, spontaneous play. Yet every one knows that; however gratifying

it is to the country boy to throw stones in all directions he cannot do this when he moves into the city. Society, as well as the individual, has its rights. But this does not militate against the doctrine of interest in itself. If it is true that the best thing for my child is to live a perfectly free, spontaneous, uncurbed life, and if such living cannot be tolerated in the city, it becomes at once imperative to leave the city. But here we must take account of the interests of parents and older brothers and sisters, which may be just as natural as those of the younger ones and which can be gratified only by city life. So, while the doctrine of interest is well worthy the attention which it receives, and while it is a splendid ideal too little realized, it is very doubtful whether it can stand alone as the center of educational theory and practice.

Let us turn to another phase of the subject which has received very little attention, but which is fraught with as much pedagogical significance as any fact of modern pedagogy. It is this: interest results from attention. A little insight into a subject is absolutely necessary before an interest in it can be awakened. Interest before insight through some form of attention is impossible.

Educational psychologies usually show how it is

that we attend to whatever is interesting, but where is to be found a statement of the equally true and valuable fact that we are apt to become interested in whatever we attend to? It is in the intellectual world somewhat as in the physical world. A little time spent in introspection and in questioning your friends will reveal the fact that the food stuff you have learned to eat is the one for which you have the greatest appetite and which you crave most. The person for whom bananas were nauseating but who persisted in eating them is the one most apt to be a banana fiend. Ask the eaters of celery and parsnips. Few men addicted to the use of tobacco escaped the first sickness and enjoyed the taste of it from the start. In short, the things we like best are apt to be the things that we have learned to like. Analogously we may learn to like things mentally for which we seemed to have no natural mental appetite. It is no uncommon thing to hear a person say, "There was a time when I disliked grammar (or arithmetic or history or Latin), but now it is my favorite study. I not only enjoy it most, but find that I can accomplish more in it than in any other line of work." One illustration I have in mind is that of a young man who studied psychology four years, doing good work but not having his chief

interest in it. He was asked to teach the subject, and went at it with unbounded energy. He held himself right to it. He looked at it from this standpoint and that. He used his pedagogical skill in presenting it to his students. Thus he got a grasp of the subject to be gained only by long, sustained work. With this there came a new and heretofore unknown interest in the subject, so that when he entered the university he elected the department of psychology for his major, and made a very fine record as a student. It may be said that if he had spent these years in the pursuit of something in which he had had an interest from the beginning, he would have accomplished more, but I have his word that there is no subject which has for him greater fascination, and his record shows that his work in this line was as efficient as in any other.

It is very important that we do not forget that we are apt to become deeply interested in the thing to which we attend. This is true of evil as well as good things, and is of prime significance in the field of morals.

There has been a tendency of late toward a "soft" pedagogy. The cry is, "Find out what the child likes and let him have it"—"The child knows better what he wants and needs than do the parents and

teachers"—“Discover the child’s appetite and then feed it.” We seem to have forgotten that the very life of the child for the first years is conditioned by his inability to have everything for which he cries; that although the child knows best what he wants, he does not know his need so well as the wise parent—and it is a cheap and reckless thing to say that he does. Any one with mother wit knows it isn’t so. And we forget that not only does the appetite determine what the food should be, but the food determines very largely what the appetite will be.

The doctrine of spontaneity, of following out the natural interest of the pupil, should play an important rôle in all phases of education, but it should have most exclusive sway during the first seven or eight years of life. This is the time when weaknesses due to heredity are most apt to crop out as a result of overwork, under-nutrition, and misdirection. It is a time when voluntary attention is at a minimum, when the muscular and nervous systems are very unstable. The life capital and conditions are such that it would seem a mistake to try to induce, and especially to force, interest through attention to what, at first, is comparatively uninteresting.

Neurologists tell us that from about nine till about

twelve the nervous system is comparatively stable and is much more exempt from hereditary diseases. We know also that the muscular system is capable of functioning pretty accurately; that the liability to fatigue, due to unproportionate development of the vascular and muscular systems, is not so great as heretofore; and that children are more free from disease and death at this time than they have ever been before or will ever be again, the girls reaching their minimum susceptibility at eleven and the boys at twelve. This is the best time in the life of the individual for drill work, for mastering the fundamentals, whether they are intrinsically interesting or not. As far as possible, work on these more or less uninteresting, but fundamental things should be associated with things that are interesting.

The observations of child life as now known seem to warrant the statement that until about eight years of age,—the time varies with individuals,—within the limits of right, the child's spontaneity should be unbridled and his natural interests gratified regardless of the amount of information he may get. This is no time to force attention, and the psychological truth that the teacher should keep uppermost in mind is that *children attend to those things which have a natural*

interest for them. On the other hand, while we should never ignore the dependence of interest upon attention, the constitution of the world is such that the child will have to attend to many things that are not intrinsically interesting, and the child from about nine to twelve is such that he can be trained into the habit of doing this with but little risk of damage. Our pedagogy will be less soft and much more effective if we bear in mind at this stage that *the child is apt to become permanently interested in whatever he attends to.* The three or four years preceding pubescence should be pre-eminently years of hard work, drill, repetition, and, if need be, drudgery, but let the work be as interesting as is consistent with these things.

CHAPTER X

THE SIGNIFICANCE OF THE RECITATION

EVERY phase of school work should contribute its share to the sum total of training and scholarship which the child is to derive from the school. In this sense one phase of work is just as important as any other. Among a number of things, all of which are necessary to a complete process and a desired result, it is not easy to say that such and such are of first importance, and others of secondary importance. Nevertheless, certain stages in a process are often pivotal. All that have gone before are of value only as they lead up to these stages, and the result sought is the direct and often the immediate outgrowth of them.

In all the varied and complex work of the school, the recitation is the pivot, or hinge; it is the center of the educational process. It is the educational arena. In the recitation the battle is lost or won. Success here almost invariably means a good school. Failure here means failure all along the line. A good recita-

tion is characterized by the birth of ideas, by consecutive thought, by great tension between the pupil's mind and the subject under consideration.

The teacher's purpose must not be merely to hear the children say over some things they may have gotten from books, but he must look upon the recitation as the chance of his life as a teacher, and as the chance of the child's life in its development. The lines must be drawn tight; the electric spark must fly, and the child's life must be quickened. All things must be conducive to this end. The excuse for a large part of school organization and school management is that they contribute to the recitation. The presuppositions of a good recitation are many and are important on their own account, but find their highest significance in serving as means rather than as ends in themselves.

A teacher may be cranky on punctuality and regularity if he insists upon these things for their own sake, but when he sees their bearing upon life and upon the school process as a whole, he is working for the best good. Viewed from this standpoint, punctuality and regularity must be insisted upon. Anything short of attendance every day, at the hour set, must not be tolerated. This is absolutely essential for the strong,

effective mental pull that characterizes the good recitation. As soon as the teacher diverts his attention, time, and energy from the students who are making this mental pull in order that he may serve as scaffolding or crutches for some student who has been tardy or absent, just so soon the recitation loses in effectiveness; and the damage that comes to the other members of the class — of which they and the teacher are often unaware — can hardly be estimated. Insistence upon punctuality and regularity is justified upon many grounds, chief among them being that failure in either makes for havoc in the recitation and so defeats the purpose of the school.

The teacher who is thus conscious of the relative significance of the recitation will endeavor to plan his work to make the most of this opportunity. He will see that it is imperative to make all assignments for study perfectly clear and definite, and of such a nature that the weakest in the class can accomplish definite results, that the strongest can employ beneficially all the time at their disposal, and that all are not only requested but required to prepare the work assigned. Such preparation on the part of the class, together with reasonable daily preparation by the teacher and fair skill in questioning and leadership, will result

invariably in good recitations. But such preparation by the class means that the time set aside for this work has been profitably employed, which carries with it axiomatically the other important fact that the children have not been idling their time away or wasting it in pursuit of mischief.

This is the kernel of School Management, a thing never to be considered as an end in itself. It is a mistaken notion that the teacher manages the school and so brings about the conditions necessary for good work. Not so at all. School management and school teaching are dialectical. They go hand in hand. They dovetail into each other. We manage the school while we teach and through our teaching; and at the same time teaching is effective in proportion as the school is wisely organized and judiciously managed. There is no one thing the teacher can do that will make for order, industry, and system in the school so much as an insistence upon definite, careful, and complete preparation of the work assigned for recitation. The good recitation is the one thing to which, if it is sought and attained, all these other things shall be added.

Unified attention on the part of the pupil and the class is a prime essential of the recitation. The dis-

tracting stimuli must be reduced to a minimum. All materials which do not have a bearing upon the work in hand should be put away. The child is not apt to hold to a development for any length of time if a dozen things of more intrinsic interest are appealing to him. The teacher is infinitely more at fault than the child when he demands attention and fails to secure it, if the material conditions, at least, are not all favorable to such attention. As well give it up in the start as in the finish, if the child does not have a desk that fits him — if it is too high or too low or improperly shaped; if he has candy or fruit or irrelevant pictures and books on his desk; if there is unnecessary noise or moving about the room; if the teacher is loud and boisterous or dramatic, and so detracts attention from the work to himself. This is the unpardonable sin in school teaching. Happily it is not the most universal one.

In this endeavor to make all things focus in the good recitation, the superintendent or principal finds a large share of his mission. A student who is a few minutes tardy seeks an excuse from the principal which will entitle him to join his class. Here is a golden opportunity for the principal to bring home to the pupil the importance of promptness in all things, while at

the same time it gives him a chance to reënforce and encourage the teacher. But what will be done in this case? No one knows. In a large majority of such cases simple justice to all concerned, as well as the highest pedagogical consideration, demands that the pupil be not admitted to his class until the close of that recitation, and that unaided he be held responsible for the work he has missed. The class and the teacher are thus protected and the child has had one of the most important lessons of life impressed upon him.

Nothing must be done or tolerated by the principal which will in the least interfere with the strong mental pull which the class is making under the stimulus and guidance of the teacher. Many principals are too apt to carry things with a high hand, to exercise the right of interference anywhere at any time. This is always a violation of the highest interest of the school. A principal, when he could just as well wait till the close of the recitation, steps in to consult the teacher, breaks the continuity of thought, sends the children in a dozen different ways, and unwittingly undermines the whole teaching process; or he mixes a shallow sense of courtesy with a shallow sense of pedagogy, and thinks that in showing visitors into

the different classes he must introduce them to the teachers. Such things are always fatal and show that the principal has not grasped the significance of the recitation. Nothing must interfere with it. It is the outcome, the fruitage of all things else. It is secondary to nothing. For it all other things must wait. The inviolable rule which the principal must observe himself and insist upon others observing is that the continuity of the recitation must never be violated except in the most extreme cases, such as convulsions, fire, or earthquakes. Let the principal consult his teachers at teachers' meetings, at the beginning or close of sessions, between recitations or at vacant periods for the teacher, and let it be a settled conviction with him that only in the most extreme cases will he do so while the recitation is in progress. Visitors should always be welcome, but let them enter the room at the beginning of the recitation or wait till its close, or, if time will not permit this, let them step in during the recitation and quietly observe the work without further ceremony.

The good teacher will see that in the recitation there must be no side-tracking, there must be nothing irrelevant to the subject. All illustrations must reinforce the work in hand. Nothing extraneous must

be admitted on its own account. I have in mind now a teacher of algebra who would at the beginning of the recitation, with the avowed purpose of arousing interest, tell the class about something she had seen in her summer trip abroad. She declared that she never failed to arouse intense interest. Doubtless she never failed, but she aroused interest in what? Surely not in algebra. The longer and better the story, the farther she led her class away from algebra and the greater the difficulty in reclaiming them and getting them back to the subject. The teacher must be interested in the thing she teaches and able to interest her pupils in it, else she is a failure. The teacher's manner, her attitude toward her pupils and her work, her questions and answers, must all be conducive to consecutive, productive mental work on the part of the class.

This kind of recitation work, together with the multitude of things which it presupposes, will have the most far-reaching and desirable results. It is recognized everywhere that much of the information gotten in the schools can in after years be turned to little practical use, and that the chief benefits derived from the school are mental discipline, habits of work, wholesome and intelligent attitudes toward people and

affairs, and an ability to evaluate. The good recitation with its necessary presuppositions cannot fail to result in just these things. For a number of years the child has had definite work assigned commensurate to his attainments and has been required to take hold of it in a definite, methodical manner, and has gotten definite results, not only in the subject under consideration, but more especially in himself. Here, as nowhere else, is the teacher's opportunity to inculcate the habits of industry, concentration, accuracy, completeness, punctuality, and regularity which count for so much in the child's after years, for happiness and success, and his efficiency and desirability as a social factor.

The recitation, if correctly viewed as the center of the school, and successfully managed as such, must result in a high degree of capability and trustworthiness in the child, which is the crowning glory of all educational work.

CHAPTER XI

ON RELATING WORK

CERTAIN questions on which teachers are at variance are: To what extent should the reason be given? Should we speculate and philosophize much or little? Or, should we give the child the thing practically cold and naked and let him make out of it what he can?

One teacher with a class of children will try to explain the reason for writing down the right-hand figure and carrying the other in a problem in addition, and is considered a thorough teacher; while another who teaches the children to write down the right-hand figure and carry the other, without a word of explanation as to the reason for so doing, is denounced as "slipshod." This "slipshod" teacher works with the thought that he is conferring upon his children skill in manipulating figures, accuracy in processes, and a knowledge of means to an end; they will, he thinks, naturally and with little difficulty "see through it." And he denounces his reasoning pedagogical brethren

as hair-splitters — teachers of dialectics, perhaps, but not of mathematics.

I know a man who consumed the greater portion of a recitation period trying to explain the reason for the nose being located as it is. It was shown why this place or that would not be a good one. A half-dozen different parts of the body were considered. For example, many reasons were produced why it would have been a mistake to have placed the nose between the shoulders; and many reasons were brought out why the nose should be in close proximity to the mouth, and many other reasons why it should be above rather than below the mouth. Well, that was interesting to me. The children were interested, and were skirmishing about to find out *why*. The order was good, the children were responsive. When they said this or that, it was true. The work was more or less logical, and no mistakes were made in it, except the great mistake — the mistake of doing such work at all. But the matter-of-fact teacher errs in the opposite extreme. He says, every child knows where the nose is, and, furthermore, he knows that to remove it to any other part of the body would be a violent stroke at beauty and utility, and in absolute scorn of this “reasoning out” work, passes the

subject by without even hinting at the mutual reinforcement of the senses of smell and taste.

A certain institute instructor gave a whole day to the discussion of the best method of presenting to the child the number *two* in all of its relations. She was an earnest and more or less helpful instructor, anxious to do what would be best, and she said to a fellow-teacher, "What do you think of the work I did to-day?" What he answered was in substance this: "Perhaps everything you said was true, in fact I think it was, but it was useless. I should think that a child who had to be taught that way had as well never go to school. Any sane child six years old knows those things about the number *two* before he enters school."

In these cases, is one person right and the other wrong? Are both right or both wrong? May I suggest what would be a good thing for teachers to do? Take up each one of these cases and try to decide for yourselves wherein each person was wise and wherein unwise. It is one of the best things you can do, even if you do not get the answer. To take up fact after fact in an isolated, unrelated way in any line of investigation is surely not good pedagogy; and to try to reduce everything to its primal cause and speculate as to its ultimate outcome is

surely in most cases impossible — if not really unwise if it were possible. To know how far back to go in the study of events introductory to the American Revolution is not easy. It would seem that some steps preliminary to Lexington and Concord should be noted. But it would seem extravagant to require a preparation on the Roman State, Laws, and Constitution; yet for the special advanced student this might be a reasonable requirement.

Through the remainder of this chapter we shall follow out one line of thought illustrating the point which has in a general way been hinted at — the interdependence of things, the reason of one fact in another. We shall show this by looking at history in its relation to geography. And if what is said in this one line is helpful, let the teachers transfer the general thought to other lines and adapt it as they may be able to do so, remembering that, after all has been said, it will be of help only by way of suggestion and warning. Who needs more than this will be helped but little.

A student asked his teacher: "Why were the Phoenicians a sea-faring people and the Egyptians a sea-fearing people? Both were near the sea. They had practically the same kind of climate and were

more or less akin." The teacher said, "Well, there are some things — in fact, a great many things — that can't be explained; the fact is that the Phoenicians were a sea-faring and the Egyptians a sea-fearing people, and that's all there is about it." Doubtless that was "all there was about it" as far as that teacher was concerned, but that boy didn't think so, and he left the recitation dissatisfied if not thoroughly disgusted. Think of requiring a student to accept such skeletons as history!

If the teacher had applied a limited amount of geographical knowledge and just a little more historical knowledge, he could have shown that the Phoenicians lived in a narrow country between the sea on the west and the mountains on the east, beyond which were strong barbaric and semi-barbaric peoples who were continually pushing over the mountains and crowding down upon the people below and driving them out; that the country itself was small and with difficulty could support an ever increasing population. The Phoenicians could take their choice and go over the mountains and against the peoples to the east of them, or they could go against the sea to the west of them. For the most part they chose the latter alternative, and thus through

the force of necessity they came to be a sea-faring nation.

On the other hand, the Egyptians lived in a broad and fertile country. With a reasonable amount of effort they could live at home. Behind them there was no such powerful and aggressive nation as there was behind the Phœnicians. The reasons that sent the Phœnicians to sea were not present with the Egyptians with so much force. And, on the other hand, for the Egyptians to take to the sea meant now competition not only with the sea, but also with the Phœnicians. They took their choice, and stayed at home. Through the force of circumstances the Egyptians thus came to be a sea-fearing people. With proper direction the class could have worked this out better than I have given it (I have seen it done more than once); they would have gained something, and would have been satisfied with it.

The average student will find a perfunctory study of Grecian history from the text a monotonous thing. But if the teacher will make the story real and reasonable, it will not be monotonous. Why was Greece, with an area less than half that of the state of Indiana, divided into twenty-four states? The student reads in his geography that Indiana is the smallest

of the North Central states, and now he finds a country only half as large as this state organized into twenty-four states. It strikes him as a strange thing. A little geographical work will make the mystery clear. When his attention is directed to the map and a contour and relief description of this little country is given him; when he sees that the country is cut to pieces by mountains running in every direction, by inlets, gulfs, and bays, that each little section is more or less isolated, and that communication from one to another is carried on with somewhat of difficulty, he will see some reason for local government, and the organization of many separate states. Then the jealousies and strifes which would naturally follow such a condition of affairs will open up the way to an understanding of the many domestic wars. The history of Greece simply cannot be gotten without its geographical setting, and this characteristic it has in common with every other country.

The influence of geography upon the historical institutions can be shown in no more effective way than by a comparison of these institutions in the three geographical zones. It is poor history and poor geography to teach the child simply that institutional life is found in higher and more fully developed forms

in the temperate than in the torrid and frigid zones. There must be some reason for this, and any child who is ready for the fact at all can easily comprehend the reason. He knows this — that children are lazy in warm weather; and he also knows that as a rule they don't work unless they have to. (He may know that this isn't limited to children.) He knows that the climate in the torrid zone is very warm, and he knows that in many parts of this zone there is excessive rainfall, and that a great variety of food stuff grows in great abundance. On the one hand, the people will be apt to be somewhat lazy, sluggish, and ignorant; on the other hand, they will be compelled to energize but little, for food is prepared by nature, and of clothing and shelter they need little. All the conditions necessary for the development of strong institutions are wanting, and we find just what would naturally be expected.

Then, what about the frigid zone? The child knows many things which will help him in working out the explanation. He knows that in winter the range of productive activities is limited; that plants do not grow as in the summer and that fishing is next to impossible. He furthermore knows that income is one of the strongest incentives to work. When he learns that

the frigid zone has practically a long and continuous winter with a very narrow and circumscribed range of possible activities; that, however much or little one may energize, one gets just about so much out of it, the mystery of low institutional forms and life will no longer exist for him. In the temperate zone he finds a variety of climate, a variety of soils, and every condition present to encourage industry, thought, and enterprise. Food, clothing, shelter, and the luxuries of life cannot be had for the mere asking as in the torrid zone. Neither does one ask and strive in vain for these as in the frigid zone. The peculiar natural condition in the temperate zone is that every one must work for what he gets and that he gets what he works for. He has to work, but he is paid for it. Work is the developer and pay is the incentive; this is shown in the advancement made in every form of institutional life.

Let us consider another illustration in the same line. Take the institution of slavery in the United States and its result — the Civil War. The history I studied in the common schools gave no hint that there was any geographical reason for this institution's existing as it did and where it did. It is not to my credit, but it is true, that not until after I had served a term as a

teacher did I know that slaves were ever held in the New England states, and then it was much longer before I knew the reason why the institution did not prosper there as in the South. I simply divided the country into two parts — in one lived the good people who had no slaves, and in the other lived the mean people who owned slaves. And finally they became so very mean that the good people had to punish them and set the slaves free. But why should all the good people happen to live in one place and all the mean ones in another? That question did not present itself. If my attention had been called to the geography of the situation and the teacher had given some skillful direction in relating it to my history work, I could have gotten from it something of real historical value as well as geographical value. As it was, I got next to nothing, and that was wrong. Some one has said, "It is better to know a little less than to know so much that isn't right." I have since known children to work it out in this way: The New England states are rugged and mountainous. The climate is cold. Extensive agriculture is impossible, especially the plantation system; tobacco, rice, and cotton, the products of the plantation, will not grow here. But in these states building material for the construction

of manufactories is plentiful. The rivers are short and rapid and capable of running immense machinery. Owing to the natural conditions, manufacturing became the chief industry of this section. But manufacturing means handling machinery; this means skilled labor. This was death to slavery, for slave labor was unskilled, and only with great expense could it be made otherwise. On the other hand, the conditions in the South for plantation life were excellent — tobacco, rice, and cotton could be cultivated with great profit to the planter. The chief need was rice, cotton, and tobacco pickers and "clod-hoppers." This work demands no skill; muscle and endurance are the chief requirements. These the slave had. Slavery was a paying institution, and it was fostered; and the geographical conditions were the chief factors that determined that here it should be a paying institution, while in the New England states it could not possibly be profitable.

History and geography are thus mutually interdependent from beginning to finish. Almost every boundary of every modern state given in our school geographies has an historical significance, to say nothing of names and locations of cities, and numberless other details. History is bare, meaningless, and bur-

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densome without its geographical setting. Any good teacher knows enough of both of these branches to do work of this kind, if he would be careful to work out the relations. The relationship between history and geography may be somewhat more obvious than that between other lines of work, but it is not more real. The teacher should be careful to give proper emphasis to such relationships.

CHAPTER XII

THE STIMULUS OF SUCCESS

ONE of the problems that is ripe for the student of psychology and of great importance to teachers is the Psychology of Success with pedagogical and social applications. No one at present has given this subject the attention and careful study which it merits, and yet on the surface there is hardly a question in the field of psychology, pedagogy, or sociology that promises more. In general we believe that what anything can do or become depends more or less upon what it has been doing, and so we believe that one's ability to accomplish certain tasks depends somewhat upon the ability he has gained in performing this or similar tasks. We predict a man's future by his past, both in general and in particular. After all else is said, one of the great differences among men is a difference in ability to do things — to make things come to pass. And it is true here that, other things being equal, we judge of a man's outlook in the light of his retrospect. It is not only true that "nothing succeeds like success,"

but it is also true that nothing helps one to succeed so much as a success already won. We shall have taken a long step in advance, psychologically and ethically, when we see that not what a man needs to do, but rather what he feels from former experience he can do, is the thing he will accomplish. Not necessity, but faith in his ability, is what sets a man to his task and keeps him at it.

In the absence of strictly scientific data our discussion must be based upon common observation, but it is hoped that the applications to be made will not suffer greatly for this reason. Every teacher has noticed with what enthusiasm and vigor children take up difficult tasks in arithmetic after they have been successful in the solution of some very difficult, knotty problem. Not all the coaxing, or scolding, or moralizing in the world would fit them half so well to take up the new work, as the victory already won. Whoever has attended country spelling matches, which were so widely in vogue until recent years, knows what effect for future contests a single victory had upon the champion and the entire school of which he was a member. A study of college oratory and the development of college orators would bring out some very valuable data. The professor of oratory often finds it difficult to keep

the squad of orators from becoming "dead," so to speak, before the primary, and progress seems to be very slow. But after the primary it is often surprising to note the remarkable development of the successful candidate. No doubt the psychology of the expert,¹ as worked out by President W. L. Bryan and Superintendent Noble Harter, would play an important rôle here; but inasmuch as the lift-up usually comes directly after the first success, it would seem that the success is an important factor; and so the college that has been winning continues to win. Not the wish to win, so much as the belief that victory is certain, does the work. The former, without the latter in good measure, rather inhibits than reenforces. Any one who is acquainted with high school or college athletics knows how important success at the beginning is, and how depressing is a series of failures. The social effect in all of these things is a very large factor. The former champion takes up his new task with greater confidence in himself, and he inspires his followers with confidence; while on the other hand, his opponents view him as a more formidable adversary, and in comparing themselves with their task are not so large or so sure as they were before the success

¹ *Psychological Review*, July, 1899.

of their rival. His success has enlarged him and his followers, and reduced the opponents.

The same effect is seen both psychologically and sociologically in the case of success in business. Not only does the business man who has achieved success take up new enterprises with more vigor and a higher degree of assurance, but the entire community believes in him, and so he is doubly reënforced for the undertaking.

But the great help that success already won gives to an individual is shown nowhere to better advantage than in the field of morals or will training—in the formation of new habits of life, and in breaking away from old ones. Many young people are kept from doing wrong things and falling into evil ways simply because they have never done so. One young man says: "I do not keep from the saloon so much from a mere sense of right and wrong. I do other things that are equally bad, but I have lived thirty years without darkening the door of a saloon, and that keeps me out. If I were to break down the possibility of saying that, I think I should become a regular visitor at such places." The thirty years behind him, not the moral ground he has attained, is the restraining power. And it should be noted here that the

reason a man takes the second drink more easily is not, so much as is commonly supposed, that he has gotten a taste and, having it in his blood, cannot get away from it. In a way this is true, and should in itself be sufficient reason to keep one from taking the wrong step. But the chief reason is this: Before this step was taken, he was an abstainer; now he is a participant, and as such it is infinitely easier to do such things, even if he bears the same name, lives at the same place, is known by all as the same man, and has only twenty-four hours between himself and his former self. So it goes in the formation of all our bad habits; the redeeming feature of the thing is that the rule works equally well in the formation of good ones. If the man who is addicted to drink or tobacco could live under conditions which free him from temptation, and which at the same time make it very difficult for him to secure them when his appetite or system demands them; and if he would thus abstain for some months, he would have one of the strongest braces possible for continued abstinence. It must not be denied, however, that his peculiarly good situation has enabled him to wean himself from these things and set his system to rights again. I would not ignore this point in the least, but

wish to bring out at its full value the important part that success plays. One man who used tobacco until he was more than fifty and then quit, says: "I often want it just as much as I ever did, but I haven't tasted it for five years and I don't intend to do so." One of the great things in his favor is the fact that he has succeeded for five years.

Success seems to enlarge in every way the man who has attained it; not only does he instantly feel relieved and free from the old task, but he feels invigorated and ready for a new battle; he thrills through and through, his eye flashes, he straightens himself up, and for the time being actually grows taller. The effect that success has upon one physiologically is as full of interest and value as its effect psychologically. The heart beat is affected, circulation is changed, the function of nutrition and the work of the glands, secretory and excretory, are accelerated or retarded. It would be strange indeed if the physiological effect of success were not almost, if not quite, as marked as are the physiological effects of fear, as shown by Mosso¹; but the facts need to be studied more fully. Does not this enlargement of the self as felt by the success-

¹ See Mosso's "Fear," published by Longmans, Green and Company, New York.

ful man, and often unconsciously subscribed to by others, account for the tendency on the part of most people to regard the man of knowledge or of wealth as in some way superior? As we think the matter over, we are apt to say that the rich man is no better than the poor man, and should be esteemed no more highly (and in many cases this judgment is true); but in spite of ourselves, when we meet a man who has amassed a great fortune and is known the country over as a money king, we do not feel that ease and freedom which we have when in the company of our professional and financial equals. If not with our mouths, we do surely admit with our feelings that, in one respect at least, this man is our superior.

In these various ways we see what the psychologic effect is upon the person who achieves success, and what the social effect is upon those about him. The principle applies all the way from the successful child in the primary school up to the great naval officer in his success at Manila. What should this mean for pedagogy? Two things, at least. In the first place, in the assignment of work, the teacher should be careful to keep within the limits of the child's ability. It is a great mistake to suppose that because the activity which one puts forth in the accomplishment of a task

is the chief gain to be derived, therefore it is of no consequence how difficult and impossible for the child the assignment is. If our children were all philosophers or students of psychical research, it would be of little consequence whether the assignment were possible of solution or not. But, happily, they are not. They are simply children, subject to the encouragements and discouragements of common humanity, and in school they ought to be accorded the same fighting chance and stimulations that adults outside the school so much need, and without which they so often fail. And when the child does an unusually difficult piece of work, or improves upon himself in any way, it is simply his due that the teacher recognize the fact. Again, this is according the child no more than his elders out in the world need to keep them going. Nothing will keep children at their work for more hours than the fact that they have been doing well, and that this fact is recognized by the teacher.

Many pages could be written upon the social effect of success, but they would not be strictly in place here. But this much may be said: No help will serve the person who is down so much as that which assists him to achieve a victory. We too often feed our tramps just enough to enable them to get to the next house or

town; we too often relieve the drunkard by giving him a dime. The problem that confronts the social student and the practical pedagogue right here—and it is no mean problem—is this: How can people who are unnecessarily or temporarily dependent be enabled to achieve a success in something that is worth while? But wherever we meet people, especially the young, let us not be too fearful lest we develop their vanity, and let us be a little more careful to let them know that we appreciate their good work.

CHAPTER XIII

THE INDIVIDUAL IN INSTITUTIONS

STUDENTS of modern philosophy are fond of showing that many of our fundamental human conceptions have their basis and origin in society; that as individuals we never should have arrived at what are now, for each of us, some of our most useful and matter-of-course conceptions, had it not been that from birth we have been associating with our fellow-creatures. And such thinkers as Dr. Paul Carus find great pleasure in showing how even the individual, as such, has had a social origin. For pedagogical purposes it will not be necessary to enter upon such abstruse considerations. It will suffice here to show in what way much of the individual's present equipment is due to his social environment — to his life among people and in the so-called institutions.

We can easily imagine a first family settling on the frontier. Indeed we know of first families who drove from Pennsylvania and Virginia through the wilderness to what was then the frontier in the Mississippi Valley.

Ofttimes a single family settled in a place remote from all civilized life and there began to work out its own temporal destiny. Such a family living all alone on the frontier was in every particular a law unto itself. There was no specialization or differentiation of labor, professions, or institutions. The father was, at least, the farmer, the carpenter, the blacksmith, the shoemaker, the school superintendent, the minister, the policeman, the judge, and the governor. The mother was the cook, the washwoman, the housecleaner, the doctor, the nurse, the teacher, and the governor's cabinet. The children at first were merely the recipients of these undifferentiated ministrations. It can be seen at once that service in most, if not all these lines, was perforce very inefficient. In a certain sense this family was very independent, but in a truer sense its limitations were many and the horizon of its hopes not wide. The teaching of the children must have been neglected by the cook. The cooking of wholesome food stuffs for the family must have been neglected by the washwoman, the doctoring of the family could not have been done well by the housecleaner, and the housecleaning itself was slighted by the nurse. The same sort of difficulties confronted the father in the performance of his mani-

fold duties, so that the school superintendent must slight the farm, and the farmer must slight the house building, and the carpenter must slight his police duties.

This man and his wife were free to do all of these things — they were in no way subjected to the customs and laws of a surrounding community; yet they were the slaves of their own social isolation. They were not free to do anything as it should be done for themselves or their children. Let it not be forgotten that one can never get far enough into the wilderness to escape the law that the price paid for being a Jack-of-all-trades is that you can be master of none. They were free to teach, but they were not free to teach well with an undivided mind and heart.

By and by the community grew by the addition of other families, and life began to differentiate in a simple fashion. A certain building was erected or set apart for school purposes, and one of the best taught of the little community — a parent or an older child in some family — was called to “keep school” for a few months during the winter season. The schoolhouse also served as a place of public worship, and certain gifted individual members of the community became the religious leaders. Business also began to differentiate. The

community, although small, was large enough so that not all members needed to do exactly the same things. Those who wished to till the soil could devote most of the time to that, and those who wished to build houses and barns could devote most of the time to such work. Certain men with the instinct for trading would carry whatever surplus of goods might happen to be produced in the home neighborhood up and down the river, sometimes many miles away, to settlements which had a shortage of this particular thing, but a surplus of something else just as desirable; and so the occupation of commerce set in. Following upon this there was need for a general storehouse where goods collected to be sent out could be kept in safety, and where imported goods could be distributed to those wishing to purchase; this was the excuse for the little general store always to be found in these early frontier settlements. One generation ago these stores were quite common in the Mississippi Valley, and to-day they are not uncommon in many of the newer Western states.

Only a few years ago many of our leading colleges had a professor of history and literature, and a professor of mathematics, astronomy, and physics. Seldom do you find to-day such a combination of subjects for

one man, and then only in third- and fourth-rate institutions.

From the simple undifferentiated life of the pioneers we have passed to the complex, differentiated life of to-day along all lines. As a rule the minister is no longer a spiritual farmer with a good "common school education"; the teacher is no longer without scholastic and professional training. A half thousand men are required to make a piano, each doing his own particular piece of work, and a score of men are required, in the same way, to make a shoe.

We no longer have a professor of history and literature, but we have professors of history, each especially equipped in special phases of the subject, and professors of literature, each with like special equipment for his work. And so it is in all our professional and business life. Practically all of the goods of the United States are retailed in department stores, in grocery stores, shoe stores, men's furnishing stores, hardware stores, and the like.

We have come to the place where, like St. Paul, we say, each of us, "This one thing I do." Our pioneer forefathers said these *many* things we do, but we say this *one* thing. In this movement from the many lines of daily interest to the one main line, there has been a

gradual surrender. I am not able to make my shoes and mend my watch as was my pioneer forefather, neither do I know in which phase of the moon to sow my cabbage seed and roof my house. But the element of gain is greater than the element of loss. The compensation for this wholesale surrender has been immense. I eat better cabbage than my ancestor who sowed his cabbage seed the same day he taught school and made his shoes. I live in a better house than he did; my minister knows more and preaches better sermons than did his, and my children are taught by better teachers. And all this has come about because, not only I, but practically all other men have said, "This one thing I do."

To-day practically every line of activity is carried on by laborers more or less skilled in the things they do. Formerly these things were done by men living under circumstances which made skill in many lines a practical impossibility.

The outcome of all this is that the world's work was never so well done as it is now, and that the world's service to the individual was never so great as at the present day. And there never has been a time in this country when each individual was so dependent upon those about him for so many of the necessities

and luxuries of life as to-day. Because I do but one thing, I am dependent upon my fellows for all things else. This in a very brief way hints at the complexity of our modern social life and the mutual dependence of people upon one another.

What is the educational significance of all this? Many men see in this movement a large social excuse for early specialization in school work. The children are, they say, destined to do certain particular things, and they must acquire great skill in these things. Let them, therefore, begin early to develop such skill, and let the public schools offer ample opportunity for such development — and so the various professions and industrial trades are knocking hard on the doors of our public schools for admission.

It is admitted on every hand that from the stand-point of the symmetrical development of the child they are wrong, but the advocates of early specialization stand unmovable on the basis of the complexity and diversity of our modern life. The society in which the child lives, they insist, is such as to make early special preparation imperative.

Our social life does indeed speak a loud and important word upon this subject, but I do not believe that it is the word which many people think they

hear. The imperative demand seems to be that the schools shall offer a broad basis of general culture for every child in the land. When every one worked at almost everything; when there were few or no experts; when skill in all kinds of labor was at a minimum, a person could do one thing about as well as another, and it made little difference which of many things he turned his attention to. Displacement from any particular line of work was of no consequence, for his lack of skill in some other work was no greater than elsewhere, and he moved along with his old-time ease and success. If he couldn't plow, he could ditch; if he couldn't ditch, he could help in the building of cabins; if he found no employment here, he could roll logs or do any of a score of other things equally well.

Not so to-day; every displacement at the present time is accompanied by considerable inconvenience of readjustment, and often great suffering. Through loss of an eye or limb, through deafness, through the invention of machinery, thousands of people are annually displaced from pursuits which they have narrowly prepared themselves to pursue; and they find it impossible to transfer themselves to other fields already preempted by specialists and experts, without greatly reducing their standards and thus entailing great hardships.

Our social life is complex; it is fearfully diversified; it demands skill and expertness, but this skill must be grafted upon a broad basis of general culture, if society is ever to free itself from the displaced thousands who are obliged, because of early and continuous narrow training, to do just one thing or nothing. Happy the person who, finding that through some physical mishap or some social transformation there is no more demand for the thing he has been doing, has had the opportunity in youth and young manhood to develop himself, and to lay up stores of information in many fields of knowledge. New skills will indeed have to be attained, but with this broad basis of culture the time required will be comparatively short, the difficulty greatly reduced, and the inconvenience of such transfer comparatively small. Just because our life is narrow and intense is the greatest social reason why no one should be satisfied with narrow, superficial preparation. Not only does theoretical pedagogy demand sound, extensive, general education for the masses, but sociology as well is crying aloud for the extension of the opportunities of basal training to every child in the land, of however humble birth and in however circumscribed field he seems destined to pass his life.

CHAPTER XIV

THE TRAINING OF YOUNG CHILDREN

THE development of the child from the second up to the seventh or eighth year, while not precisely the same during any succession of months or years, is marked by no decided turns. The annual increase in height and weight does not vary greatly, but there is a steady growth in both these directions, very much less rapid than in the first year, and less rapid than during the years that immediately follow this stage. The child is becoming more and more active, but owing to a lack of development of the peripheral muscles and the nerves that control them, his movements are uncoördinated, so that he is not effective as a producer and activity is its own excuse for being.

Special sense education and the development of language continue at a rapid rate; the brain grows rapidly and approximates its full weight at the age of seven or eight. The sensory side is still in advance of the motor, but the child is by no means receptive

only. His activity, resulting in no outer product of value, finds its immediate value in itself, and so this is the stage of play. His keen sensory side catches up every suggestion, making this preëminently the stage of suggestion and imitation. He gets most of his information first hand through the senses; further than this his mental life is made up chiefly of reproduced images and crude products of the imagination, although he is capable of carrying on, in a simple fashion, many of the higher mental processes.

Unless spoiled, the child at this age knows no such thing as shame or modesty; he is apt to be selfish and fond of teasing and bullying, as has been so well shown by Burk.¹ His notions of right and wrong are not clearly defined and are very vacillating. Any vestige of a moral code that he may possess is not of his own making but has been impressed upon him from without through suggestion rather than precept.

As in infancy growth is the prime desideratum, so here it is the thing of chief importance; not so much a quiet unfolding of the latent powers of the child as in infancy, but rather a development through activity. But it must not be forgotten that the benefit derived

¹ Frederick Burk, "Teasing and Bullying." *Pedagogical Seminary*, April, 1897.

here from the activity of the child is to be found in the child and not in the thing which he does.

"During the period of brain growth in bulk up to the seventh year, when the full size and weight are almost attained, nutritive influences are of the largest value. How far this can reach positively needs future demonstration, but is rich in promise; how far negatively, is well understood, but receives as yet insufficient support. There are during these early days more formative power and less output of energy exhibited."¹

All of the essentials for normal growth in the stage of infancy should be diligently observed here as well — nutrition, cleanliness, sunshine, fresh air, and care to prevent arrested development from diseases and traumatisms. But in addition to these things, there arises here the pedagogic problem of positive training, physical and mental.

The first question, of course, is this: Should the child receive any systematic training during this stage, or should we simply observe the foregoing conditions for growth and keep hands off?

This much can be said in regard to this question. Biology and psychology tell us that what one can do at

¹ J. Madison Taylor, "The Causes of Mental Impairment in Children." *A.M.S. Bulletin*, July 15, 1895.

any given time depends more or less upon what he has been doing; *i.e.* the life of one stage is determined very largely by the life preceding this stage. From about two up to seven or eight the child is acting and reacting. He is giving himself his first kinks and turns. He is laying out the lines for his future automatisms and driving the stakes. His style of sitting, walking, speaking, and throwing, his style of reaction to authority, his style of social reaction, are all becoming defined and taking set during these plastic years. The lines are being laid for or against the child whether he will or not. Care and systematic training should be given during this stage only in such measure as will assure the best approach in all of these lines to the years that are to follow. For such guidance the essentials are *sensible* sympathy and a rare fund of insight and self-control.

Where we do not know the wise course in training, the watchword should be "hands off." But the most commonplace teacher or parent knows that if a child sits "humped up" the first years of his life, the chances are that he will never sit erect; if he is allowed to fly into a fury and scream and tear his hair during these years, the tendency later will be to do something worse; if he does everything in a slouchy,

careless, half-finished way, with great difficulty will he ever learn to do things in any other way. If he is allowed to lie and steal with impunity, he will develop into a thoroughgoing liar and thief. With respect to these and similar things the child should not be allowed to develop at random. Who knows more, can do more; who knows less, should most assuredly do less. In a word then, our motto for this stage should not be "hands off," but rather this: a better knowledge of child life, and greater sympathy with it, so that we may be able to know how and when to lay hands on.

Let us notice a second question: If the child is to receive more or less systematic training at this time, what should it be?

It has already been observed that during this stage the child's keen sensory side catches up every suggestion, so that this is the stage of suggestion and imitation. Here is one of the keys to the solution of the problem. Another key is to be found in the fact that this is preëminently the play stage. We have here a hint at both matter and method. (1) The greater part of the child's activity, and, indeed, all of it at the beginning of this stage, should be play and not work. (2) Work should be only introduced gradually in

proportion as the child develops in mental and physical control. (3) The child should not be required to perform a perfect piece of objective work.

In regard to method, but two things can be said with any degree of definiteness. (1) Suggestion should play an important rôle, and (2) the spontaneity of the child should have full freedom.

This gives us a basis for the discussion of these two practical questions: (a) What things may be taught the child at this time? (b) How should they be taught?

It would require many volumes to discuss the merits and demerits of the entire catalogue of subjects, so the purpose here will be merely to touch upon enough things to bring out the thought and illustrate the principle. Let us make the application to the child's play, work, and conduct.

Play. If play is to serve its highest end, it must be spontaneous for the most part, free from outer direction, and careless of ends. Play under close supervision is a self-contradiction — it not only defeats the ends of play, but ceases to be play. Parents and teachers need to remember that to require children to play according to prescribed formulæ means to have them quit play and go to work, and at the same

time robs them of all the benefit of the initiative; and that thereby the main avenue of approach to the child's life is closed. It is a matter of common observation that to know a child, or any one else for that matter, we must leave him free to live his own life. This free living of the child is his play. It is commendable in parents to join in the plays with their children, but if they do so, they must do it for the most part at the suggestion of the child, and play the part the child would have them play in his own way.

Kindergartners and teachers in elementary schools would do well to observe the same thing. To call work play doesn't make it play, and any performance planned and closely supervised by the teacher, however attractive it may be in itself, realizes less in play results than in work results. This suggests the amount of freedom and spontaneity that should characterize the school plays of this early stage, whether within or without the schoolroom. If the kindergarten emphasizes play as an element in its curriculum, it must not be tardy in recognizing what are the essential elements of play. Furthermore, we should remember that, as Sheldon and Gulick have shown, during these years children do not take kindly to organized play or so-called teamwork, and when inveigled into

it, are unsuccessful. It must not be forgotten that during these years the accessory muscles are not under good control, that movements are uncoördinated, that the child is not effective as a producer, and that activity finds its immediate value in itself. Coöperation is essentially a work factor and not a play factor; and, this being preëminently the play stage, the child is not successful in coöperative games. Ample opportunity for unorganized, unhampered, spontaneous activity on the part of every child should be the play ideal of every kindergarten and elementary school.

Work. In considering the work appropriate to this stage of the child's development, some things need to be restated as a basis for discussion: (1) that the end of work is a definite product — physical or mental; (2) that this is the stage of imitation and suggestion *par excellence*; (3) that the accessory muscles are not under good control; and (4) that the child's mental life is made up chiefly of percepts, reproduced images, and crude products of the imagination.

Taking up these points in the order named, we note first that the child should be required to do only those things for which he has a fair degree of efficiency; otherwise the end for which work is intended is de-

feated and through the force of habit a positive injury may come to the child. But those things for which he does have a fair degree of capability, he should be required to do. For, if it be true that at this time all work and no play makes Jack a dull boy, it is also true that all play and no work makes Jack a mere toy. The principle is equally applicable in the fields of mental and physical work.

In making pedagogical deductions from the second point, viz. that this is preëminently the stage of suggestion and imitation, we might say in passing that both common observation and psychological research have shown the truth of the statement.

What the child gets through suggestion at this stage amounts to infinitely more in every way than what he gets in the form of precepts. To illustrate: neither formal grammar nor even language lessons is necessary to insure good usage on the part of the child who has lived among people who speak correctly; and no amount of both will insure correct usage on the part of the child who is not so situated. A year's change of residence served to alter in every way the pronunciation of two children aged three and six, while the pronunciation of their parents was entirely unaffected. Such cases could be multiplied indefinitely. In fact,

suggestion and imitation are the basis for the development of language in both the race and the individual, and should be the chief and, aside from incidental correction, the only means of helping the child in his language at this time. Let the child hear correct usage and as soon as he is able to read let him have access to a variety of well-written story-books, and he will be helped infinitely more than by any amount of formal instruction. The latter method of helping the child not only fails in its purpose, but even does positive harm, inasmuch as it prematurely brings him to a consciousness of his own mistakes and of errors of which he would otherwise happily remain entirely ignorant. The language ideal at this time is saturation in good forms. Let the eye and especially the ear feast upon good language, but never make the child acutely conscious of the fact that one thing is good and something else is bad. An acute consciousness of good usage is only second in harmfulness to an acute consciousness of bad usage. This is the ripe age at which to give the child a start in the foreign languages, provided he is so situated that he may apply both eye and ear to the work. If those with whom he associates use the foreign language, and if the literature at his disposal is written in this language, he will

at this time learn the second language almost as easily as he did his mother tongue. But, if he hears the mother tongue only or mostly, and the foreign language merely in the class room, it would perhaps be better to defer the work until a later stage.

In the second and third points under consideration we have ground for determining the nature of the manual work suitable for this stage.

Since President G. Stanley Hall's first lectures upon the subject some years ago, and the publication of Burk's work¹ on the development of the nervous system from fundamental to accessory, many kindergartners have very wisely discarded work which requires fine movement and delicate adjustment, such as fine needlework, work upon delicately perforated cardboards, and the laying of small sticks; and they have harmonized their requirements in writing more with the facts of modern physiology and psychology, by making greater use of the blackboard and allowing children to do this work on a larger and freer scale in every way. The effect of the later methods upon drawing has been equally wholesome, and this, together

¹ Frederick Burk, "From Fundamental to Accessory in the Development of the Nervous System and of Movements." *Pedagogical Seminary*, October, 1898.

with the facts brought out by Lukens and Barnes from their study of children, gives a pretty safe basis for determining the drawing work to be done at this stage. The researches of Ross,¹ Bryan,² and Burk³ indicate that from the standpoint of physiology and psychology the work in drawing at this time should be just what Lukens and Barnes have found it to be when the child is unhampered and left perfectly free to express himself. The studies of the former show that there is but little peripheral control at this time, but with proper practice control may be developed rapidly at seven or eight years of age, while the studies of the latter show that the earliest drawings of the child are apt to be mere scribbles. The former have shown that the child is incapable of fine movements and delicate adjustments but can easily make larger movements, and the latter have shown that after the scribble stage the child naturally draws with a few large telling lines, making the drawing quite simple. Lukens agrees with Barnes in his thought that this is the time

¹ James Ross, "Handbook of the Diseases of the Nervous System." Churchill, London.

² William L. Bryan, "The Development of Voluntary Motor Ability." *American Journal of Psychology*, November, 1892.

³ Frederick Burk, "On the Development of Voluntary Motor Ability." *American Journal of Psychology*, Vol. V.

for the alphabets of drawing, but that the technique or grammar of the subject should be deferred till a later time, say about the ninth year; and Mr. Henry T. Bailey, in the Massachusetts Report of the Board of Education, says that, "If the power to draw is not acquired before the end of the ninth year, it is not acquired in the public schools."¹

Inasmuch as our purpose here is to set out in relief the stages in child development with some of the more obvious pedagogical deductions only, the subject of drawing as such cannot be discussed fully; we can consider merely some of the primal facts that will serve as guides in working out the details. As the ideal at this stage, on the side of physiology and psychology, should be not so much a definite product as a bridging over from the unorganized, uncontrolled movements at the beginning of this stage to a higher degree of mental and physical coördination and control at its close, so at this time the ideal in drawing should be not so much one who can draw, but rather a movement away from scribble to plain definite lines whose combinations have some meaning. (Great care should be taken to avoid arrest of development

¹ Report of the Massachusetts Board of Education, 1894-1895.
Boston, Mass., 1896.

either from crowding, retardation, or reversion.) Since suggestion plays so important a rôle at this time, "interest in drawing should be early developed by giving children access to an abundance of good pictures, illustrated books and magazines, plates of great men and great scenes, and great sculptures, paintings, and edifices. These helps are of the utmost importance in all art education, and should be in the environment of the child from the beginning. Drawing thus becomes a pleasure to children, and they acquire considerable skill without any instruction."¹

The general principles in a rational course in drawing would serve equally well in other lines of manual work. Local conditions will be a determining factor in the technique of all of this work, but not in the principles underlying it. In all of the manual work up to seven or eight years of age, the spontaneity of the child should be allowed to assert itself. Many will naturally begin with other forms than drawing. Some take to paper-cutting first, and follow this cut with drawing. I have seen pictures of animals, by a boy seven years of age, so true to life that

¹ Herman T. Lukens, "A Study of Children's Drawings in the Early Years." *Pedagogical Seminary*, October, 1896, Vol. IV, pp. 79-110.

even the mental mood of the animal could easily be detected. Although the pictures in themselves were plain, the conception and execution showed a potential artist. This work for him was, above all things else, a mode of expression, just as speaking, writing, or drawing are for other children. It was followed by coloring and writing, with unusually rapid progress in both. It is difficult to guess what the result would have been if this child, at the age of four or five, had been required to conform to a cut-and-dried course of manual work. But we cannot take what this child did so well as evidence that all children of his age should do a certain amount of paper-cutting. The valuable pedagogical suggestion here is that children should be supplied in the home and in the school with a variety of materials and have an opportunity to express themselves with perfect freedom.

If the development of the race and the child have any pedagogical significance, this period is evidently the ripe time for beginning the study of nature. We are not, neither shall we be, free from the need of and interest in the three fundamental human requisites, viz. food, clothing, and shelter. The poet and the philosopher cannot prosper on rhyme and speculation alone. They, as well as the scientist and the laborer, must have

life before they have their own peculiar lives; they, too, must be fed, clothed, and sheltered. We have here a center in which the interests of all humanity converge. The poorest and the most ignorant have little more, and the most favored have nothing that can be substituted for these same fundamentals. The need for biologic knowledge was the first and continues to be the primary need of life. To know in some way which things are for us and which against us, which will cure and which will kill; in short, to know the life with which and in which we live is our primary need. This is true not only chronologically, but logically and biologically as well. There is no escape from it. If there is any truth in the "recapitulation theory," and if the natural spontaneous interest of the child is to be a determining factor in the selection of material for the kindergarten and elementary school, it would seem to be a serious error to omit those things which have been the earliest and most persistent elements in the development of the race and in which the child finds his greatest delight.

It would be outside the scope of this book to discuss the standpoints, sources, and methods in nature study. Suffice it to say that the most prevailing standpoints are what are known as the (1) mytho-poetic,

(2) human value relation, (3) ethical value, (4) æsthetic value, (5) intellectual value. None of these is all-comprehensive and, indeed, it may be that all of them are not, but each will serve as an organizing idea for the work. A pedagogical question which arises is, In which order should these different ideas be developed? The interest of the child must determine this very largely. Perhaps, for young children, better and more varied results can be gotten from the mythopoetic standpoint. Perhaps, for the adolescent, the standpoint of ethical values can be used most effectively. We see here how intricately related are all the problems and phases of pedagogy. To plan a course in nature study, one not only needs to know nature as it is to-day, but also the cultural stages through which the race has passed, and above all one needs to be a student of children. Whoever tries to solve this or any other pedagogical problem from the standpoint of some little phase of work in which he may have particular interest is more apt to go wrong than right. The great text-book of nature is open before us. In this, both the race and the child find their primary and fundamental needs supplied, and their first and most abiding interest awakened. In the kindergarten and the elementary school, when practicable, the care

and culture of animals and plants should be the first aim; where this is not practicable, association and acquaintance with them should be encouraged. This study should constitute the very core and heart of elementary education and should be secondary to no other phase of work.

This is also the time to use myth and narrative history. For the child the world is shrouded in mystery and peopled with strange and unheard-of beings. The mysterious appeals strongly to all, but especially to the child, whose experience is limited and to whom the world is largely a mystery. Although his curiosity for meaning is intense, the world cannot be interpreted to him scientifically or philosophically. Myth offers a splendid opportunity for introducing him to many of the forces and passions, hopes and fears, victories and defeats, that have made his world what it is. It should be taught as the counterpart of nature study, the one introducing the child to life as it is found in plants and animals and the other introducing him to human life and spirit. Following close upon myth or carried along with it should come narrative history — not the history grind, but the historical story. Children have great delight in change, in movement, in events. This is especially true where the agents are human or where

they are conceived as possessing or being ruled by a spirit akin to human spirit. The child is not interested in the intricately complex principles and processes of modern society, but his interest in the simple and more tangible beginnings is absorbing. Any phase of history that can be subjected to the form of the simple narrative story is excellent pabulum for the child at this time.

There remains to be discussed the subjects of reading, writing, and arithmetic (the three R's) for children before their seventh or eighth year. To make more firm the ground on which deductions in regard to these subjects are to be based, let us notice some additional things that are true of the child and his development during this stage. In his address on *Psychic Processes and Muscular Exercise*, Mosso¹ says:—

"In man the brain develops later than in all other animals, because his muscles also develop later. The striped muscles are more incomplete at birth in man than in any other animal. For this fact that the human brain develops so slowly I am able to discover no other reason than this, that at birth the organs which effect movement over which the brain exercises its authority are not yet

¹ Angelo Mosso, "Psychic Processes and Muscular Exercise." *Decennial Celebration of Clark University*, 1899, pp. 383-395. Published by Clark University, Worcester, Mass.

complete. Modern views show a tendency to confirm what the great philosophers of Greece already recognize, viz. that children ought to begin to read and write only with the tenth year; that it is injurious for the development of the brain to be fettered to the school desk when only five or six years old. Attention produces not only the same chemical effects and the same fatigue as muscular exertion does, but we feel also, when we are attentive to anything, the characteristic muscular strain on the occiput, the forehead, and other parts of the body. The more mobile the extremities of an animal are, the more intelligent it is.

"The mutual relation of intelligence and movement is one of the most constant factors in nature; the movements always change where intelligence changes. Microcephalic individuals have an awkward gait, and an inconsiderable dexterity in the movements of the hands. This change is still more striking in the case of idiots. When the brain has been fatigued by exclusively intellectual activity, the sensitiveness of the hand and direct irritability of the muscles are also decreased. The influence of the hand upon the development of a language is evident from the fact that an aphasic patient is made to write in order that he may gradually regain the power of speech. The relation between muscular movements and conscious processes is so intimate that when the arms and hands of a hypnotized person are brought into certain positions, and certain muscles by external contact made to contract, certain emotions are induced corresponding to those muscular contractions."

But as has already been noted, Ross, Bryan, and Burk have shown that before seven or eight years of age the child is to a high degree ineffective as a motor being. The work of Lukens and Barnes on drawing, as well as common observation by every one, reenforces the thought. If there is, then, this close parallelism between movement on the one hand and psychic processes on the other, as is claimed by Mosso, it must follow that inasmuch as movements are spontaneous, uncoordinated, and but slightly under the voluntary control of the child, so will his thoughts likewise be spontaneous, flitting, and illogical; and this is exactly what we find in everyday observation. Dr. Vulpius has studied the fibers which horizontally traverse the surface of the hemispheres, which he calls the tangential fibers. These appear on the outer layer of the cortex in the fifth month of life; in the seventh month the tangential fibers can be found in the deep layers; while in the layer between, the cross fibers appear only after a year. "In the child of eight, and perhaps even of seven years, the fibers of the cortex and medullary substances are complete in number and caliber, and have taken the same arrangement as in the adult. It is during the development of the brain and the nervous system before birth and during

these first years of growth that malnutrition and perverted action occur, which result in defective mental power." The point in this that needs to be emphasized here is the close relation between nervous nutrition and mental power. Neurologists and students of children's diseases all agree that up to seven or eight years of age is the period when the effects of bad heredity are brought out, owing to the rapid rate of growth and the instability of the organism. If, as Hurd says, in the process of education, energy designed to further the growth of the brain is dissipated in functional activity, hereditary tendencies to disease become thereby developed, or the development of the brain is limited and defects become evident which under more favorable circumstances would not have existed.

In summarizing the foregoing considerations we reach these conclusions: (1) A close relation exists between movement and intelligence. (2) The child's movements are uncoördinated and spontaneous. (3) Therefore the child's mental life at this time is apt to be spontaneous, flitting, and illogical. (4) The brain is developing primarily in growth and not in function. (5) We should, therefore, expect a very simple kind of mental life. (6) The necessity is for brain nutrition and not brain functioning to bridge

over the period when hereditary tendencies to disease are most likely to be developed.

If these things are true, a question for pedagogy to answer is: Are reading, arithmetic, and writing, as daily assigned tasks, conducive to the best development and highest welfare of the child? Is the amount of information and so-called discipline derived from the study of these subjects by children under eight years of age worth the cost? A comparison of the outlay with the income compels the conclusion that they are not worth the cost. The work in these subjects violates the foregoing principles of child life and development during this stage.

First let us notice reading in the light of the summarized statement of facts. Perhaps no one who reads this will remember his own peculiar psychology when he learned to read his mother tongue, but most will remember their experience in learning a foreign language. Students of the French and the German languages find at first that if they are very careful about their pronunciation, they are apt to go over a page without extracting the thought; on the other hand, they find that if they are anxious about the thought, their pronunciation is bad. Young men and women find it very difficult to get both faultless form

and meaning until they have spent many years upon the language. And yet we require the child, with his simple, undeveloped, uncoördinated physical and mental life, to perform an even more difficult task. Who does not remember what a difficult thing it was, in reading the foreign language, even to keep the place? But this is only one element in the child's difficulty; he must hold his book up, hold it open, keep the place, and by close attention and delicate adjustment of the eyes, he must decipher the characters in themselves and keep them related to each other, and then we expect him to keep the meaning and read with spirit and understanding. The performance of such a task is not only injurious, but in most cases impossible, and its requirement is positively cruel. Such work should not be a fixed daily task of the child until there is a fair degree of muscular coördination and control, and mental strength commensurate to such physical development. It should not be required until he has passed the period for the cropping out of weak hereditary tendencies due to instability of organization and rapid growth, which would be at about the age of nine or ten. For essentially the same reasons, work in arithmetic and penmanship should be taken up, if at all, only incidentally during this early stage.

Aside from the purely concrete number work, arithmetic is sufficiently abstract and general to demand at least a fair degree of brain functioning and the ability to direct attention and to carry on, in a simple way at least, the processes of abstraction, association, and generalization. There is nothing in the physiology or psychology of development which indicates that the average child of seven or eight is capable of these things. By constant appeals to the child, together with scolding and threatening, a few arithmetical facts may be hammered into his head, but no one would ever guess that he could do anything worth while with these facts outside of the schoolroom; on the contrary, every one who has given the matter even passing attention knows that he cannot. If the child should give all the time and energy that are worse than wasted on arithmetic to sensible work in nature study, myth, and narrative history, for which he has both interest and ability, the world would be revealed to him in innumerable ways, learning would not be a drudgery and a bore, and time would be found for the introduction of many kinds of work that have a real significance and value for him. He would gain more effective arithmetical knowledge and ability incidentally in connection with the sub-

jects of vital interest and importance than are gained by the humdrum, formal study of the dry-as-dust arithmetic.

Reading and arithmetic should not be taught as formal subjects until the close of the transitional period at about the age of nine or ten. The conservatism which keeps us doing things simply because we have been doing them must be broken away from whenever there is ground for so doing, and especially when it is plain that there is a better thing to do. When reading and arithmetic constituted almost the entire curriculum, child life and its development were not the criterion. Social rather than physiological and psychological facts were the determining factors. Professor Dewey has well said that: "The primary school grew practically out of the popular movement of the sixteenth century when, along with the invention of printing and the growth of commerce, it became a business necessity to know how to read, write, and figure. The aim was distinctly a practical one; it was utility—getting command of these tools, the symbols of learning, not for the sake of learning but because it gave access to careers in life otherwise closed." The social aspect of education to-day should not be ignored in the planning of school work,

but it should not be emphasized to the hurt of the child. Any attempt at curriculum making or educational procedure which does not take into account the laws and stages of development of the one to be taught, is apt to go wide of the mark and result in positive injury.

Conduct. In deducing some of the more general principles which underlie the conduct and moral training of the child up to seven years of age, we must here, as in his play and work, make our determinations from the standpoint of the child himself and not from the standpoint of the adult. Two points must be borne in mind. (1) Many things which would be immoral for the adult have no moral significance whatever for the child. (2) The child's standard of morality, so far as he can be said to have a standard, does not come to him so much by intuition as by precept, and not so much by precept as by unconscious suggestion and imitation. The first point will be helpful in determining the content of morality for the child, and the second will serve as a guide in determining the method in moral training.

Nothing could be more deadening to the development of the child than an attempt to make him conform in every way to the moral standard of the adult.

Because the child appropriates at this age that which does not belong to him, he is not therefore a thief as his father would be under the same conditions. Because the child in the vividness of his imagination does not adhere strictly to the literal truth, he is not therefore a liar. Because the child connives in every conceivable way to attain a desirable end, he is not therefore a trickster; and because the naked child, even at seven or eight, manifests no sense of shame, he is not therefore immoral. From the standpoint of the adult these things would all be serious breaches of morality, while from the standpoint of the child they have little or no moral significance. But there will come a time in the life of the child when these very things will have moral significance.

The pedagogical question is: What can be done for the child at this time which will result in a sense of right and wrong and a disposition to do the one and avoid the other, but which will not result in prudishness or a precocious and morbid sense of moral delinquency? Prudishness and moral morbidness, above all things else, must be avoided during these years. Better no sense of morality at all than that the child of six or seven should either hold himself up as a bright and shining example of right conduct, or

that he should magnify his childish mistakes into cardinal and unpardonable sins. Such moral attitudes are far more hopeless, even, than almost any other childish misdemeanor. It is not good for the child to be acutely conscious either of his goodness or his badness. His mind for the most part should be, and under normal conditions will be, occupied with something other than self. It is in this connection that direct, positive, moral training at this time not only fails to accomplish desirable ends, but does positive harm; the child and his behavior are apt to be the topic of discussion. For this reason, in all attempts to teach morals, an indirect method — the reading of a story, the relating of an incident, and the like — is superior in every way to the more direct treatment, which should be held in reserve for special cases. We often teach the child to discern the right from the wrong, and admonish him to cleave to the one and forsake the other, only to find that as a result of our teaching, or in spite of it, the second state of that child is worse than the first. As a rule, the discriminations that he is capable of making are not effective in determining the course that he will pursue. Fine discriminations and admonitions are apt to be valuable in proportion to their scarcity.

Nowhere in the development of the child do suggestion and imitation play so lasting and important a rôle as in the development of morals and conduct. As nothing helps the child so much in the acquisition and use of good language forms as saturation in good language forms, oral and written, so nothing will instill within him the habit of using pure rather than vulgar language so much as association with those who always use pure language. No amount of moralizing on the sinfulness of lying will help the child so much as living with people who always speak the truth; and nothing will more readily and effectively develop in the child a sense of personal and property rights than association with those who are careful to observe the rights of their fellows, and who do not appropriate to their own use that which does not belong to them. The first great concern of parents and teachers who are interested in the morals of their children, should be their own behavior.

The moral ideal for the stage of childhood is innocence of right and wrong, morally considered. Every child knows that there are some things that may be done and some that may not. This knowledge should come to him as a matter of course. He soon learns to keep his hands out of the fire because he doesn't

like the result of putting them into it; and so he must early learn to desist from many things for the same simple reason that he doesn't like the consequence; but he does not, neither can he, look upon these things as right or wrong in themselves. I have known children to repeat the oaths of their elders with as little sense of guilt as if they were repeating the catechism, and in so doing they were not immoral. The danger, however, is that, having the language at their command, they will find it but a short step to supply the content which means profanity. Something should be done to prevent such results. Prohibition of the use of such language, with little or no emphasis upon the naughtiness of it, is the most rational and effective remedy. And so it is with the child's conduct in general. He must obey the word of his elders. The experience of the parent and the teacher must count for something, else what is the significance of parenthood or control in school?

There will come a time when the child should be thrown upon his own responsibility — left more or less free to do as he desires; but not so in his early years. Indeed, at the beginning of life, so far are we removed from the possibilities of such an ideal that implicit obedience should be insisted upon.

Some one has wisely said, "If the child does not obey when first commanded, he should be punished ; but if the teacher even succeeds in securing obedience after he has commanded many times, he, and not the child, should be punished." Teachers must know how demoralizing it is to keep nagging at children. They must know also that there are some requests whose reasonableness cannot be explained to the child. In such cases implicit, unquestioned obedience should be expected.

The child with a healthy mind does not contemplate the wickedness of one possible line of action and the goodness of another line, and upon the basis of this discrimination determine his act. If he be a normal child, he desists from doing certain things, because he has learned that these are things that must not be done, and he falls into the habit of letting them alone. On the other hand, if he be a normal child, he does certain things over and over again, until his habit of action begins to take form. And thus the child should pass from his childhood into the early years of youth with the alphabets of moral habits pretty firmly fixed, but in no sense a contemplator of deeds.

CHAPTER XV

THE SIGNIFICANCE OF THE SECOND DENTITION

IN passing from the stage of childhood to that of youth, at about the age of eight, there is a marked transition period which has many of the characteristics of the preceding stage, and at the same time develops new features peculiar to the stage that follows it. As in the other transitional periods, no hard and fast lines can be drawn, but in general the time is between seven or eight years of age at the beginning and nine or ten at the close. During these years old things are passing away and new ones appearing.

At about seven or eight years of age the brain has approximated its full weight, and is changing in its development from increase in size to increase in function. Along with this there is a change in the rate of bodily growth; so that the annual increase will be greater at the beginning of this stage than it has been through the stage of childhood. The child is losing his first teeth and the permanent ones are coming. This more objective and superficial change seen in

the case of the teeth has many physical and mental counterparts ; the child is not quite at his best either physically or mentally.

Doubtless many of the disturbances of this time are due to bad nutrition, which finds its cause in improper mastication of the food, the child sometimes lacking as many as three or four teeth at a time. This same thing is seen in many of the domestic animals, notably the horse, which gets its second teeth at the age of four. Dealers in horses for the market will not buy under five years of age. Their stock remark is that a horse at four is of no account. While this is not literally true, any one who has handled young horses knows that a four-year-old does not have the endurance or the trustworthiness of a three-year-old. Reggner¹ observed that young monkeys often sicken and die of fever when shedding their milk teeth, and the same process is certainly not free from risk in the human subject. Nervous children often become emaciated during its progress, or suffer from neuralgia or cough ; and from having been hardy and robust, they become pale and delicate. Apparently in connection with the second dentition also, complaints are sometimes made of headache, tenderness of the eyes, and lassitude.

¹ J. Crichton Brown, " Education of the Nervous System."

At this period is encountered also that curious and sometimes puzzling perversion of the moral nature, known as malingering. From egotism and insatiable craving for notice and sympathy, from a desire to escape work, from jealousy, or from some more complex motive, the boy or girl simulates disease — and may do so with considerable ingenuity and success — or exaggerates some trifling ailment. The disorder is generally poverty of the blood and nervousness, which not rarely are connected with constitutional changes associated with the second dentition.

There is a change in the vascular system at this time. Krohn has found that the child of eight is fatigued much more easily than one of six or seven or one nine years of age. There is apt to be dilation of the heart and cardiac incompetence, such as shortness of breath and readiness of fatigue. The reason for the dilated heart at this time is the sudden increase in weight of the child without corresponding increase in size of heart muscle. The dilation or tendency to dilation and fatigue curves represent the fact that the child must conserve his strength until his heart grows to its work.

Dr. Christopher says: —

“We must recognize that the period from seven to nine years of age, quite irrespective of the other conditions of

the life of the child, is one in which fatigue occurs very readily and is one in which damage to the heart is likely to be produced. This period in child life is one to which special attention should be called because of the extremely insidious character of its approach. It is not only in physical fatigue that it manifests itself, but in mental fatigue and in the exhibition of many nervous symptoms otherwise utterly unaccountable.

"One of the commonest manifestations is the appearance of general laziness on the part of the child, and it is extremely common to conclude that the child needs more exercise. As a matter of course it is perfectly evident that, of all things, the child does not need more exercise at this period, but in every way its force should be conserved and its labors reduced to the smallest possible degree consistent with the maintenance of health. The duration of this period lasts occasionally a few months, although in a number of instances I have known it to last two years and even longer, during which time the child's failure to develop sufficient progress at school, and its manifestations of unpleasant nervous symptoms have been the cause of great anxiety on the part of parents. It is clear that the school work during this period of life should be diminished to a point below that which has been done the previous year and which may be undertaken safely the next year."¹

¹ W. S. Christopher, "Three Crises in Child Life." *Child Study Monthly*, December, 1897.

The studies of Jastrow² indicate that at this time there is a transition, change, or stage in the development of the special senses, notably the sense of sight. The results of his investigations and observations show that children who lose their sight before about seven years of age (the time coincides approximately with the time for the full weight of the brain) do not have visual images, and, as a rule, those who lose their sight after this time have them. This, perhaps, does not point so much to a change in the development of the organ as it does to a central change. However this may be, it is significant as marking a time of transition in the course of development, and is fraught with great pedagogical value, not only for those who teach all classes of blind people, but also for those who teach normally developed people.

One of the most striking changes that occur at this time is to be seen in the entirely different nature of the somatic diseases preceding and following this period. During the stage of infancy, from two to seven, is the time for infectious diseases, and after this time, as Holt shows in his treatise on "The Diseases of Infancy and Childhood," there is a transi-

² Joseph Jastrow, "The Dreams of the Blind." *New Princeton Review*, 1888, Vol. V.

tion from the infectious diseases of childhood to the diseases which are more often found in adults than in children. The change in nervous diseases at seven or eight indicates even more clearly than does the change in somatic diseases that this is a time of transition. Before this time — which Clouston¹ designates as the period of most rapid brain growth, special sense education, motor coöordinations, and speech — the prevailing nervous diseases are convulsions, squint, stammering, backwardness of speech, night terrors, infantile paralysis, tubercular meningitis, hydrocephalus, and rickets. "Every one of these," he says, "can be connected with the immense brain growth of the period, with the development of certain essential brain functions at this time, such as speech equilibration and the other essential muscular coöordinations, with the intense trophic activity, and with the rapid metabolism of every tissue, with education of function of special sense organs and their brain centers."

The character of the nervous diseases which follow this short transitional period in most cases differs very greatly from that of the diseases preceding it. We have now, says Clouston, the period when muscular

¹ T. S. Clouston, "The Neurosis of Development."

motion becomes coördinated fully with emotion, as seen especially in facial expression; and the nervous diseases which characterize the years from eight or nine to thirteen or fourteen are chorea, some forms of epilepsy and somnambulism, megrim, asthma, and some eye defects.

In this transitional period, at about eight years of age, there are as many striking indications of physical disturbance and readjustment as are found in the pubescent period about which so much has been written and spoken. Doubtless if the period at eight carried with it any objective sign of the birth of a function so deep-seated and universal as is the sex function, it would not have been long in receiving the attention due it, for in other ways the changes which occur at about eight are even more striking than those that occur at about thirteen.

As was said in the introduction of this topic, the life at this time is both retrospective and prophetic. We have both the traces of the stage preceding it, and suggestions of the stage following. Part of the child's teeth are temporary and part of them are permanent; the child's brain, although it has approximated its growth in size and is turning toward development of function, nevertheless continues to grow at a slow

rate, and functions often inaccurately and with difficulty. The vascular system is as it was, while the muscular system has taken a sudden leap ahead, and the disproportion in the development of these two systems at this time results in cardiac incompetence and fatigue. The somatic and nervous diseases are about evenly divided between those characteristic of the stage preceding and the one following. There seems to be no abrupt change in the development of the senses at this time, and yet the period is significant, inasmuch as those who lose their sense of sight before this time are apt not to have visual images and those who lose their sense of hearing before this time are apt not to have auditory images.

This, then, is a time of readjustment in the vascular, muscular, and nervous systems, and of great disturbance in the functions of circulation, digestion, and nutrition. Coming at about the age of eight, when the child is apt to be in his third or fourth year of school, these facts are fraught with great pedagogical significance. It seems evident that the child is not capable of the same amount of physical and mental activity and endurance as he was at six or seven or as he will be at nine or ten, and this fact in itself would demand on the one hand a decrease in

the amount of work required, and on the other hand the provision of ample opportunities for pleasant recreation and amusement and quiet rest.

Dr. Jackson says, referring to the disorders incidental to the second dentition: "The remedies which I have found most useful are as follows: First, a relief from study or from regular tasks, yet using books as far as they afford agreeable occupation and amusement. Second, exercise in the open air, preferring the mode most agreeable to the patient and in most grave cases the removal from the town to the country."

CHAPTER XVI

THE PEDAGOGY OF YOUTH

ALTHOUGH no two records on the growth of children coincide throughout, there seems to be a general agreement that at about eight or nine years of age comes a sudden increase followed by a slight decrease in annual increment until the time just preceding puberty. So far as is known there is nothing peculiar in the development of the nervous system at this time. There seems to be a steady development of the functioning power of the brain and a very slight increase in its weight. These years of slow growth from about nine to twelve or thirteen years mark a third definite stage in the development of the child. Both the physical and psychical life are unique and demand a unique pedagogy. The child is not simply his former self grown larger; he is in many ways an altogether different being. The transitional period from seven to nine has served to transform him not only nominally, but actually, from the stage of childhood to that of youth.

The chances for life are better now than they have been heretofore, the girls being least susceptible to disease at eleven (3.23 per 1000) and the boys at twelve (3.42 per 1000).¹ The somatic diseases to which the child is liable, although not peculiar to this stage of youth, are almost entirely different from those of the preceding stage; while the nervous diseases to which he is most liable are to a high degree peculiar to this stage. The heart muscle has increased in size proportionately to the size of the body and so fatigue is less easily induced than at the age of eight. "Sensation, special and common, and its organs have been developed; muscular coördination has progressed far; and many of the mental faculties, such as memory, fancy, and emotion, have all acquired some strength; but muscular action has not been fully coördinated with feeling, and this is the period of life when this coördination takes place."²

This is the period of endurance and of coördination, mental and physical, and mental with physical; the time for the storing up of reserve power and the establishment of automatisms — the essential forerunner

¹ E. M. Hartwell. Report on Physical Training in the Boston Public Schools, 1893 and 1895. (Boston, Mass.)

² T. S. Clouston, "The Neurosis of Development." (Morison, Lectures for 1890.) Oliver and Boyd, Edinburgh, 1891, p. 138.

of the reproductive function. It is the intermediate stage of life between the stages of greatest brain growth and of highest functional advance; between the pure gathering in of egoism and the appearance of the higher altruism. Above all things else this is the "laying up," the "salting down" stage of child life.

As before, let us consider the stage of youth from the threefold standpoint of play, conduct, and work.

Play. In regard to the child's play at this time, the principles recognized in the earlier stage should not be lost sight of here. The play should be unhampered, spontaneous, and careless of ends. But other elements enter now which were not present before. This is the time when the transition is made from the purely individual games and plays to the full-fledged coöperative games. Every nine-year-old boy has his "nine" and "eleven" or belongs to the teams of some other boy. From the immediate artistic standpoint all such coöperative play is a failure, but its mental and physical significance to those who participate can hardly be gainsaid. At first the captain of a team will often be unable to hold his men together long enough for a single game; a bruised finger, a bad start, an imaginary slight sustained by

a prominent member of the team, and a multitude of equally trifling matters play havoc with the captain's organizing genius.

These things are not so true of the twelve-year-old team. Three years have served to work a transformation. Now teams are organized that remain intact all the season; almost every town has its "North Enders," "South Enders," "West Siders," and "East Siders." Whereas the nine-year-olds hardly knew the "outs" from the "ins," the twelve-year-olds know the game as well as the most inveterate "rooters." Furthermore, they have attained the muscular strength and coördination to execute it. Hand in hand with this development of muscular strength and control have gone mental strength and control. The team hangs together after a half-dozen crushing defeats; they do not disband because the pitcher has an off day or because the center rush fumbles. They have learned that to have one's own way absolutely in play means to play alone, and that teamwork means self-control in the highest sense.

Aside from health, which should be the chief consideration, the great gains to be derived from play at this time are to be seen in the increased mental and physical control developed in coöperative games and

plays. Along with this control and subjection of one's whims and caprices for the sake of the group, there must be found the same spontaneity and freedom that characterizes the stage up to seven. The chief difference lies in this, that whereas in the earlier stage the plea is for the absolute freedom and spontaneity of the individual, here we must insist upon the same degree of freedom and spontaneity on the part of the group. There the individual quit playing with his doll and began playing with his toes at will. Here the group quits playing ball and begins playing war at will. There the child exercised the initiative in every particular. Here the group exercises this prerogative. There must, in the latter as in the former case, be absolute freedom from external control. Better that a team should disband a dozen times a day than that it should be organized by the captain's father and sustained through paternal compulsion.

Moreover, one of the things that every child must learn sooner or later is that if he is to live in society there are some things he may do and many things he may not do. One of the hardest lessons that a boy has to learn who moves from the country into the city is that he cannot throw stones in every direction.

It is not easy for him to reconcile himself to the proposition that all his throwing must be straight up. But that is the price one must pay for social life. There is no place where this lesson can be taught so naturally and brought home to the child so forcibly and in a way that will be accepted so readily as in his own coöperative games and plays. Thus unconsciously to the child and entirely incidentally has come to him one of the most essential and fundamental lessons of social life.

Conduct. In the following discussion of work for this stage, and in the discussion of conduct for the previous stage, most things that bear upon conduct at this time are given. All of the principles suggested for the earlier stage should be observed here. But it must not be forgotten that the child's notion of right and wrong has developed *pari passu* with his physical and mental development. He should, therefore, be held responsible for his conduct in a way that heretofore would have been unjust. Insight and rational sympathy on the part of teacher and parent are of the greatest importance. Judicious but close discipline should be exercised. While the fundamentals for work as suggested below are being drilled into the child at this time, it is just as necessary that the

fundamentals in conduct should not be slighted. No task should be set that is too difficult for the child to perform, and no performance should be accepted that is not well done. Irremediable injury will come to the child who is allowed to approximate roughly a standard in work and conduct. Fairness should always characterize any requirement in conduct, and the child should be expected to fulfill this requirement promptly, fully, and unequivocally. These are the years for discipline in conduct as well as in work.

Work. The stage from nine to thirteen differs from the one up to seven years in that the earlier was preëminently the play stage, while the latter should be preëminently a work stage. It was found that before seven the child is not apt to have developed mental and physical control sufficient to enable him to produce effectively and that he is apt to be injured by trying to do so. After the transitional period, at about eight, the average child is found to possess sufficient strength and mental and physical control to produce effectively in various ways without endangering his health or development. It must never be lost sight of that an injudicious amount of work is to be avoided at all times.

This, then, is the time when the child should be

initiated into hard work. It is a time, also, when his tissues, muscular and neural, are plastic and when he is largely exempt from disease. It is the time for drill, for practice, for discipline, and even for drudgery. This is in no way contradictory to the doctrine of spontaneity advocated for the preceding period. The conditions of life which have just been enumerated show that the child does not now run the risk of arrested development as heretofore. In the discussions of the spontaneity and natural interest of the child, one very important chapter of psychology is too little considered. This is the dependence of interest upon attention. The emphasis is almost always placed upon the obverse proposition that children attend to whatever they have an interest in, but it is just as true that they are apt to become interested in whatever they attend to. Owing to the conditions of development, in the stage up to seven let them attend for most part to those things which attract them without assistance, and for this later stage of youth let them attend to those things which serve as the alphabets of formal school work, even though at times their interest in some lines must be induced by attention to them.

Many lines of work which the child was capable of pursuing only incidentally in the previous stage

should now be taken up in earnest, while the things he has been doing he should in a degree continue to do.

Nature study should not be supplanted by arithmetic, and the story will still have its place in the curriculum, but the studies will be readjusted so that the course will be strengthened by the addition of subjects. Reading should now be made one of the daily assigned tasks. The average child by this time possesses the mental and physical strength and control which will enable him to use the instruments of reading as a source of enjoyment and information without endangering his health and robbing him of time that could be used much more profitably in other ways. The child of nine or ten will not consume all his energy in holding the book open, keeping the place, and interpreting the thought. The end to be attained should be facility in reading rather than ability to pronounce polysyllables. To this end there should be accessible to the child a well-selected list of books bearing upon a great variety of subjects of human and especially of childish interest, and he should have perfect freedom in the selection of his reading material. A great amount of oral reading should be encouraged. Facility to catch the thought and to

express it intelligently must be sought. The aim should not be to develop critics, but to master the subject as a tool; to become proficient in the use of it as a joiner is in the use of his chisel. It need hardly be said that the child's opportunity for such drill is not limited to his reading and story books, but that every book he uses, regardless of subject-matter, serves equally well. If the time given to reading before the child is seven years old were given to real things in which he has a lively interest, as was suggested in the discussion of work for that stage, he would bring such a fund of information and interest to his reading work at nine years of age that the problem of method in teaching reading would practically solve itself. It has been demonstrated over and over again that the way for an adult to get a working mastery of a language is to become absorbingly interested in the subject written in that language. And so it is with the child. If he can arrive at this stage with a first-hand knowledge of and interest in rivers and hills, flowers and trees, birds and bugs, animals and people of all sorts, reading will be a key whose use he will not be long in learning.

Arithmetic also should cease to be an incidental study and should become one of the regular studies

of the programme. The child now possesses a fair degree of brain functioning power, and the ability to direct his attention and to carry on, in a simple way at least, the processes of abstraction, association, and generalization. He also has physical development sufficient to use the materials of arithmetic to some purpose and without injury to himself. The aim at this time in arithmetic should be a mastery of the fundamentals, the establishment of the alphabets of arithmetic. For two reasons this should be done. There will never be a time when the child can do this kind of work better than he can now ; and advance in the subject is absolutely hopeless without it. The child must learn to read and write numbers, whole numbers, fractions, decimals, and denominate numbers. He must learn the addition and the multiplication tables until, shuffle them however you will, they will be as familiar to him as his own name. He must become thoroughly at home in the tables of denominate numbers. No effort should be made to put the child through the book or to make a mathematician of him. He should not be held so much for his method as for his work. He should not be held for the logic of his work but for the performance of it. He is not necessarily ignorant of his work because he cannot explain

it. The aim in arithmetic at this stage should be *drill* upon the fundamentals until the child uses them with as much ease as he feeds himself.

The foreign languages should be taken up at this time. Indeed, if the child is so fortunately situated as to hear these languages, or if skillful teachers can be secured, they may be taken up much earlier. But under no conditions should they be allowed to be deferred to a later time than this. Observation and testimony both show that seldom is a person who begins the study of a foreign language at a later stage entirely free from the accent peculiar to his own language and in every way as proficient as a native. This is the time when children manufacture language; when they speak the so-called "pig Latin"; when they distort their words and sentences; when they communicate in abbreviations; when they use secret language; when they begin to talk by gestures and use the deaf and dumb alphabet. It is the ripe time for the grafting on of new modes of expression. The wisest and most successful teachers of foreign languages advocate its study at this time, and some of them even earlier. As in the use of the reading and the arithmetic book, so here the child is able to use the materials necessary for such study. The thing to

be aimed at is facility. The conversational method should be used. Whoever cannot teach by this method should be considered unfit for the modern languages, as one who does not know the multiplication table without the book is unfit to teach arithmetic. Correct forms should be insisted upon from the start. This end will not be attained so much through a grind upon technical grammar as by reading and hearing good forms and exercise in the use of them. The ideal for the foreign languages at this time will be much as the ideal for the mother tongue was in the earlier stage, and, indeed, as it is for the most part in this stage: *saturation in good forms, both oral and written, with perfect freedom of expression.*

The work in nature study will serve as the most natural introduction to the study of geography. The child's interest in his natural environment will be extended to an interest in nature in general. Through his knowledge of and interest in the plants and animals of his own region, he can easily be led into a study of the fauna and flora of different countries, and this will in its turn serve as an excellent introduction to the study of biology a little later. In the same way an interest in the mineral world will bring him naturally to the study of geology. The child knows

that many things which he consumes in the way of food and clothing are not produced at home and he also knows from his previous work in nature study that these things have their origin in plants and animals. Here is an additional incentive to study the plants and animals of different regions, but it serves its highest ends as an introduction to the study of the two great geographical topics of commerce and manufacture. No more dreary task was ever assigned a child than the one of committing to memory outright all the agricultural and manufactured products of the different states in Asia or the imports and exports of Australia. And no more valuable or absorbingly interesting piece of work can be undertaken than the tracing out of the process that resulted in the shoes or the hat that he wears, or the salt and pepper that he eats. Instead of getting a few isolated facts which are dismissed after the recitation for others just as valueless, the child would thus get things in their relations, and the phases of original production, transportation, and manufacture would signify something to him.

Without any attempt at philosophizing—a thing to be studiously avoided at this time—questions which arise in the mind of the child are, “Why don’t they raise pepper and cotton in New England?” — “Why is the

meat that I eat carried from the Mississippi Valley?" — "How is it that the people in the plains and their neighbors on the mountain side produce such widely different things?" — "Why is Vancouver so much warmer than Labrador?" It need hardly be said that such questions show that the time is ripe for the study of climatic conditions — the significance of altitude, latitude, ocean currents, relief, contour, movements of the earth, the change of seasons, and all the geographical conditions which make the products of one region differ so widely from those of another. The study of the relief of a country, its climate, and the like, paves the way to the geographical study which is the basis for history work. Children at this age can be led to see and to have great interest in seeing why, for example, Illinois does not extend a little farther west, Indiana a little farther south, and Massachusetts a little farther east; why ancient Greece was divided into more than twenty states; and why modern Switzerland is divided into twenty-six cantons.

It must be admitted that these suggestions do not at all times run parallel to the logic of the subject, but it must also be admitted that they run parallel to good pedagogy, and we care more for pedagogy than we do for a smooth-running piece of logical machin-

ery. The chief reason that geography has been a bore to students and a burden to teachers and a grief to pedagogues, is that we have been trying to organize it and present it logically, beginning with mathematical geography, in which the child cannot possibly have any interest, and going from this through physical to political. If the wits of the pedagogic and scientific world were summoned to devise a more unpromising and fruitless scheme for geography work than the one of following out the logic of the subject, their work would surely result in unequivocal failure.

In the same way the history stories and the myth of the earlier stage bring the child naturally to the more careful and detailed study of history. The work at this period should be full of human interest. The time has not yet come for the more abstract study of treaties, constitutions, and government documents. In the study of American history the beginnings appeal strongly to children of this age. Well-written stories of the voyages of Columbus, of the expeditions of Drake and De Soto, of the work of La Salle and Marquette, of the landing of the Pilgrims, of the founding of Jamestown and St. Augustine, the winning of the West, the stories of David Crockett, Daniel Boone, and George Rogers Clark, have a great fascination

for the child at this age and will be retained with remarkable tenacity. This is the "blood and thunder" age of the child. He will now follow in detail the maneuvers of an army, the rough plan of a campaign, the results of battles, with more delight and often with more accuracy than he will at a later stage. One reason why so much time is given by older students to wars instead of to interpretation and historical documents (on the ground that there is no time for the latter) is that the wars were not taught when they should have been taught. Any normal child who has had rational training will, at the age of ten, read about the battles of the American Revolution from Lexington and Concord to Yorktown with approximately as much understanding as he will at twenty, and with infinitely more pleasure and enthusiasm. Only let the history be authentic and well written, and do not deal it out piecemeal, but let it be read, a whole campaign or a whole war at a time. No wonder a child loses interest and enthusiasm when the lesson closes in the middle of a retreat, and he is punished for reading beyond the prescribed limits of the assignment.

Biography should constitute a large part of the history course at this time. The strong interest in human life and activity so characteristic of the earlier

stage has not waned. A majority of our children come from the public schools after three or four years spent in the study of some text-book in history without any very definite idea of the subject. If we would but take advantage of their normal interests and introduce them to the lives of the men and the women who have made history, the results obtained would be more in proportion to the time and energy spent. It would be unwise perhaps to advocate biography exclusively for this stage, but I have no doubt that if the average ten-year-old child could have access to the biographies of twenty of the most influential citizens of our country, representatives of different times and movements, his real knowledge of history would be as far in excess of what it usually is as a mountain exceeds a mole hill. In the life of Washington alone he would be introduced to colonial government, the French and Indian War, attempts at union, the colonial and continental congress, the various grievances of the colonies, the Declaration of Independence, government under the Articles of Confederation, the Revolutionary War, the adoption of the Constitution, the birth of the government, the division of the people into parties, and many other facts of history. The aim must be to present the work in a connected form. It will be

time enough to cross-section it and bring together everything that happened everywhere in a given year, after the children have the longitudinal lines laid. We must have the historical warp before we try to put in the historical woof.

Manual work adapted to the development of the child should constitute a regular part of the programme during this stage. Just what this work should be, external circumstances and the interest and ability of the child must determine, but in most cases drawing, carving, and similar exercises requiring not too fine an adjustment of the muscles are desirable. And this is above all things the time for practice and drill in these lines of muscular activity that are to become habitual. The child who is to become an expert pianist or violinist, for example, should devote these years to laborious drill upon these instruments. Work in voice culture should be begun at this time, although judicious care needs to be exercised later to prevent permanent injury when the voice is "changing." The child who is to have complete mastery of his body, of the physical movements, must not neglect the work in physical culture. At no time in one's life is it so true as at this period, that "as you live now will determine how you will always live."

In the pedagogical discussions of this book dogmatism has been studiously avoided. It would argue a lack of comprehension of the entire subject to say that at a given time such and such parts of such and such subjects, and nothing else, should be studied. The attempt has been merely to show that many things the schools are trying to do at certain times are out of place, and to show what would be the better things to do. I have, therefore, in displacing some of the standard studies (reading, arithmetic, etc.) before seven years of age, suggested some lines of work that are suitable for this time, without drawing a line between the things that must, and must not, be done. Indeed, it would be strange if there are not many things unnoticed in that discussion which should have a place in the curriculum. The purpose was simply to work out the principle and illustrate rather fully. And so, in the discussion of work for this stage from nine to twelve or thirteen, it cannot be said what are all the things that may be done and all that may not. But I have taken up the subjects that were discarded in the previous stage and have tried to show that they should now have a prominent place in the curriculum, and have made suggestions as to the nature of all the work for the entire period without any attempt to go into details.

The observations and studies have led to this conclusion in regard to the work for the two stages ending at seven or eight and twelve or thirteen respectively: that the work in the earlier stage as a rule is too heavy and that too much is expected of the child; and that the work of the later stage is too light and too little *required* of the child.

I wish, in conclusion, to emphasize the fact that many of the fundamentals in training of all kinds can be gotten only through service, through long-continued application; and that there is no time in the life of the individual so well suited—from the stand-points of mental capital and development, and physical capital and development—to drill work as the years just preceding the dawn of adolescence.

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Title **The basis of practical teaching**

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